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QUARTERLY JOURNAL OF ORNITHOLOGY.

EDITED BY

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STRICKLAND CURATOR IN THE UNIVERSITY OF CAMBRIDGE, &c.

AND

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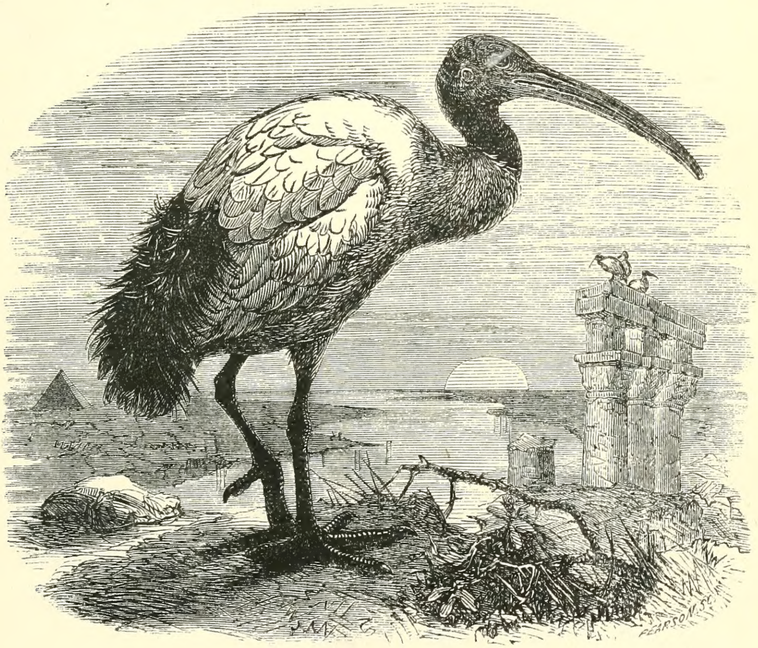

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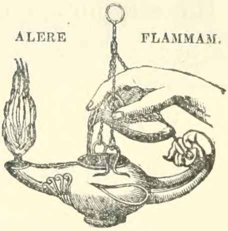
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The Editors look forward with confidence for a continuation of the support that has been accorded them.

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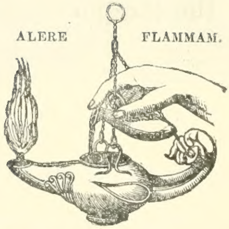
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PREFACE.

In concluding the first volume of a new series of 'The Ibis' the Editors beg leave to tender their best thanks to those who have contributed to its pages for the good supply of papers they have received during the year, and to congratulate the Members of the British Ornithologists' Union on the excellent quality and great interest of many of these communications.

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No. I. JANUARY 1877.

I.—*Contributions to the Ornithology of Borneo.*—Part II.*

By R. Bowdler Sharpe.

Mr. Everett has returned to England for a few months, and has brought with him a large collection of birds from North-western Borneo. The determination of the species having now been brought to a close, I have much pleasure in giving a list of them in continuation of my former paper on this subject. At the same time it will be seen that the principal interest attaching to this paper consists in the careful notes which Mr. Everett has been so kind as to give me, on the species procured by him. Considering the difficulties which beset the naturalist in a country like Borneo, it is impossible to feel too grateful to this gentleman for the very energetic way in which he has devoted himself to the study of the natural history of the island. This last collection has been formed with the same care as the previous ones, notwithstanding the drawbacks of serious illness and fever, from which Mr. Everett is only now slowly recovering.

Before commencing the list of the present collection, which has been chiefly formed in an entirely new district, viz. at

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* For Part I. see 'Ibis,' 1876, p. 29.

Bintulu, it is well to make a few necessary corrections in regard to the localities mentioned in the previous paper. Mr. Everett had very kindly forwarded me a little map of N.E. Borneo, with some of his collecting-stations entered in ink. It seems, however, that the other printed details of the map were faulty, and not intended for publication (the map is a small missionary chart); and the following notes give a more correct idea of the localities where Mr. Everett has been collecting for the past seven years:—First of all the name "Kucking" should read everywhere in the former paper as KUCHING, this being the name for the chief town in the Sarawak Raj. Then again, with regard to the paragraph (p. 30) commencing "Sibu Island &c.," Mr. Everett remarks:—"Sibu Island and the Matu river are situated, the first at the apex of the Rejang delta, and the second on the shore-line of the same delta, the former being distant some 80 miles from the BRUIT entrance." With regard to the other localities it may be mentioned that TAGORA, PUAK Hill, SIRAMBU, BUSAN, JAMBUSAN, BELIDAH, GUNONG TRAHN, MATANG, and BIDI are all within 20 miles to the west and southwest of KUCHING. SIMUNJAN is some 20 miles from the mouth of the SADONG. MARUP lies at the base of the BALANG and TIANG LAJU mountains, and is distant some 80 miles by the river's course from the mouth of the BATANG LUPAR; and, lastly, SANTUBONG, KALAKAH, REJANG, and BINTULU are on the coast, the latter locality being situated on the Bruni frontier, about halfway between KUCHING and Labuan.

As regards the determination of the species, I must again record the great assistance which I have received from Count Salvadori's work*.

CIRCUS SPILONOTUS, Kaup; Sharpe, Ibis, 1876, p. 30.

a. ♂ ad. Bintulu. Iris pure brilliant yellow; feet and legs chrome-yellow, claws black; bill black, pale lead at the base; cere greenish yellow.

b, c. ♂ juv. Bintulu, Nov. 11, 1875. Iris warm chocolate-brown; bill greyish black, base of lower mandible lead-colour; cere dirty greenish; legs and feet pale greenish yellow, claws black.

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* "Catalogo sistematico degli uccelli di Borneo di Tommaso Salvadori con note ed osservazioni di G. Doria ed O. Beccari intorno alle specie da essi raccolte nel Ragiato di Sarawak," Ann. Mus. Civ. Genoa, v. p. 1 (1874).

d. ♀ juv. Bintulu. Legs and feet pale whitish yellow; cere pale whitish green.

[This Harrier is probably only a migratory visitant, as all my six specimens have been shot during the N.E. monsoon. The present individuals were shot as they were flying over marshy ground at the mouth of the Bintulu river.—A. E.]

HALIAETUS LEUCOGASTER (Gm.); Sharpe, Cat. B. i. p. 307.
Cuncuma leucogaster, Salvad. *t. c.* p. 5.

a. ♀ juv. Jilalong branch of Bintulu river. Iris warm chocolate-brown; legs and feet dirty greenish white; bill blackish horn, whitish at base.

[A very rare bird in Borneo, according to my experience. I have only seen it twice—once about 40 miles up the main Bintulu river, and again far inland on the Jilalong.—A. E.]

This Eagle is included in Count Salvadori's work provisionally with a query. He seems to have argued from its occurrence in all the neighbouring islands that it must therefore be found in Borneo. This supposition is now confirmed by Mr. Everett, to whom belongs the credit of adding the species to the Bornean list.

HALIASTUR INTERMEDIUS, Gurn.; Sharpe, Cat. i. p. 314.
Haliastur indus, Salvad. *t. c.* p. 12.

a. ♀ ad. Bintulu, Oct. 4, 1875. Iris brown; bill bluish, horn-yellow at the tip; cere pale chrome-yellow; feet pale yellow, with a green tinge.

b. ♂ ad. Kabulau, on the Jilalong branch of the Bintulu river. Iris warm chocolate; feet pure deep chrome, claws black; bill greenish.

[A young female shot at Bintulu in Sept. 1875 had crustacea in the gizzard.—A. E.]

SPILORNIS PALLIDUS, Wald.; Sharpe, Cat. B. i. p. 290, pl. ix.

a. ♀. Bintulu. Iris golden; orbital skin deep yellow; cere greenish; bill bluish lead-colour; the culmen clouded black; legs and feet dirty chrome-yellow.

b. ♀. Bintulu. Legs and orbital region chrome-yellow, claws black; other parts as in preceding. Crustacea in the gizzard.

Both the above-mentioned birds are young.

Spizaetus alboniger, Blyth; Sharpe, Cat. B. i. p. 271; Salvad. *t. c.* p. 14.

a. ♀ juv. Bintulu, Oct. 23, 1875. Iris golden yellow; bill and cere black; feet pale dirty greenish yellow, the soles dull ochreous orange.

Syrnium leptogrammicum (Temm.); Sharpe. Cat. ii. p. 264.
Ciccaba leptogrammica, Salvad. *t. c.* p. 20.

a. ♂. Bintulu. Iris dark warm brown; bill bluish grey.

b, c, d, e. ♀. Bintulu. Iris warm chocolate-brown; bill white, tinged with blue at the base; feet bluish lead-colour.

[Tolerably abundant in the old forests in the vicinity of Bintulu.—A. E.]

This series shows that the species varies considerably, especially in the chest-patch, which is deep chestnut-rufous in some, pale tawny in others, while some examples have the breast much whiter than others.

Ninox scutulata, Raffl.; Sharpe, Cat. B. ii. p. 156.

a. ♂. Jambusan, March 1875. Iris golden; feet dull ochre-yellow; cere greenish.

[Distributed throughout Sarawak. The Malay name of "Pongok" represents the clear loud cry of this bird. In a ♂ shot at Simunjan, October 1870, the legs were chrome-yellow; iris brilliant orange-yellow; bill greenish white; cere of bill green; testes long, dark yellow; kidneys dark mottled purple; stomach distended with beetles, chiefly Buprestidæ; intestines very long, and with intestinal worms present, about 1½ inch in length. Another individual, shot at Sibu, had a small gecko lizard in its stomach.—A. E.]

Caprimulgus salvadorii, Sharpe, P. Z. S. 1875, p. 99, pl. xxii. fig. 1.

a, b, c, d. ♂. Bintulu. Iris dark brown; bill and legs dark purplish brown.

e. ♀. Bintulu. Soft parts same as in the male.

The series which Mr. Everett now brings shows that *C. salvadorii* is most closely allied to *C. macrurus*; but the principal differences seem to be in the blackish colour of the lores and region of the eye, and the very distinct white cheek-stripe. In *C. macrurus* the lores are reddish, as also is the side of the face, and the white cheek-stripe is nearly obsolete.

[Santubong, Kalakah, Rejang, Bruit, Bintulu. This Goatsucker is by no means uncommon in Sarawak; but it is very locally distributed, being confined to the coast-line and its immediate vicinity, and, so far as my observation has gone, to the sandy portion of the coast. The note is single, and sounds like the distant stroke of a mallet on wood. The eggs are creamy white, with faint purple-grey marblings, and they are laid among the short turf which holds the sand together beyond high-water mark. The stomachs are generally full of beetles, chiefly a small green chafer, but also longicorns and elaters. It is noteworthy that in places haunted by this species one never hears the note of any other kind of Goatsucker, although the "Pongok" Owl (*N. scutulata*) sometimes approaches within a mile of the shore.—A. E.]

MEROPS BICOLOR (Bodd.); Sharpe, Ibis, 1876, p. 33.

[An abundant species, but confined to the sandy tracts on the shore-line, though a pair will be met with now and again as far as 20 miles inland, where a sandy bank happens to offer facilities for nidification. A female shot in April had a shelled egg in the oviduct. I am inclined to think these birds are migratory, but am not yet satisfied on this point. A pair shot May 20, 1870, showed no difference in plumage; but two females shot in August 1873 had the chestnut of the crown dashed with rich dark green. The only external differences between the sexes are that the green hues of the male are brighter and yellower than in the female, in which a bluer cast predominates, and in which the green of the belly is paler; and the shafts of the two median rectrices are usually developed further beyond the vanes in the male than in the female. The flight of these birds is strong, and combines the swift skimming of the Swallow with the airy hovering of the Falcon. Now they will flutter up just as a Skylark does, and then swoop earthwards like a Hawk after its quarry, and then again will rise and float almost without motion, merely balancing themselves in the breeze by a slight quivering of the pinions. When at rest they commonly perch on the topmost twigs of the lower *Casuarina* trees. The gizzard always contains insects—beetles, dragon-flies, and orthoptera, as well as wasps and bees.—A. E.]

NYCTIORNIS AMICTA (Temm.); Salvad. *t. c.* p. 91.

a. ♂. Bintulu. Iris pure orange-red; bill black; feet green.

b. ♂. Bintulu. Iris vermilion.

c. ♂ juv. Tagora, May 1875. Iris greyish brown; legs bluish lead-grey.

[Tolerably common throughout the territory. A nest containing two eggs was brought me at Belidah in January. The eggs were rather small in comparison with the size of the bird, nearly equal at both ends, and spotted with faint red in a ring round the larger end, the ground being white. The nest was neatly lined with dry grass inside, and exteriorly was roughly put together with bamboo-leaves and rush.—A. E.]

ALCEDO BENGALENSIS, Gm.; Salvad. *t. c.* p. 92.

a, b. ♀. Bintulu. Bill dark brown, reddish at base; feet orange-red; iris brown.

c. ♀. Bintulu. Bill blackish brown, reddish at base; feet dull vermilion.

[Common at Bintulu on the shore and in the Nipah creeks.—A. E.]

CEYX RUFIDORSA, Strickl.

Ceyx innominata, Salvad. *t. c.* p. 97.

a. Bintulu.

b. ♂. Jambusan. Iris chocolate.

Both these specimens are true *C. rufidorsa.*

Eurystomus orientalis (L.); Salvad. *t. c.* p. 105.

a, ♂. Bintulu. Iris brown; bill and legs orange-red, claws black.

Hydrocissa convexa (Temm.); Salvad. *t. c.* p. 80.

a. ♂. Bintulu. Iris crimson; naked skin bluish white; legs blackish lead-colour.

b. ♂. Bintulu. Bill yellowish white; naked skin at base of bill and about the eyes white tinged with greenish blue; feet and legs very dark grey. Fruit-pulp in gizzard.

[This is the commonest Hornbill in the Sarawak territory, being found chiefly in the vicinity of the coast.—A. E.]

Cacomantis merulinus (Scop.); Sharpe, Ibis, 1876, p. 34.

[Common all over Sarawak in gardens and cleared spaces, whither these birds resort at dawn and dusk, flitting silently about and resting now and again on palings, low bushes, &c., or sometimes in the grass. They also fly by day, but not usually. Their cry is exactly like the Malay words "tiup api" (literally "blow the fire"); and hence their name among the natives. The "Tĭūp apì" is one of the Sea-Dyak birds of omen. In a male shot at Sibu in April 1874 the testes were yellowish, semiglobular, and equal; in another individual, from the foot of the Matang mountains, there was only one small testis present; and in this specimen the iris was light red instead of carnation. The interior of the gape is cinnabar-red; tongue scarlet, with the posterior barbs finely slit. These birds appear to feed chiefly on lepidopterous larvæ.—A. E.]

Carpococcyx radiatus (Temm.); Salvad. *t. c.* p. 77.

a. ♀. Bintulu. Iris pale grey-brown; bill and orbital space with the feet and legs sea-green, darkest on the bill. Gizzard full of beetles. Caught in a trap set on the ground.

Hierococcyx fugax (Horsf.); Salvad. *t. c.* p. 65.

a. ♂. Bintulu. Iris and lores brilliant yellow; feet wax-yellow; bill black, yellow at the base and at the tip.

[Bidi, Simunjan, Marup, Bintulu. Not a common bird in Sarawak. Feeds on orthoptera. Interior of gape green. —A. E.]

SURNICULUS LUGUBRIS (Horsf.); Salvad. *t. c.* p. 63.

a. Jambusan. Iris brown.

RHOPODYTES ERYTHROGNATHUS (Hartl.); Sharpe, P. Z. S. 1873, p. 604.

Rhamphococcyx erythrognathus, Salvad. *t. c.* p. 74.

a. ♂. Tubau, Bintulu. Iris bright cobalt-blue; orbital space deep crimson; legs dark leaden grey; bill whitish green, the base of the lower mandible dull dark crimson.

b. ♀. Tagora, May 1875. Iris bright orange; orbital space pure deep crimson; legs and feet dark leaden grey, with a cast of olive-green; bill pale green, but round the nostril and all but the extreme third of the lower mandible dull crimson.

[When this bird is sitting quietly in a tree its note is a low "kuk-kuk;" but when it is on the wing these syllables are repeated several times rapidly in a loud tone. The flight is swift and gliding; and if the bird is in open spaces, it always flies very low. These Cuckoos are very partial to the fields of "lalang" grass, where they obtain abundance of orthopterous and other insects, with which their gizzards are invariably crammed.—A. E.]

It will be seen that the colour of the iris in the male does not agree with that given by the Marquis Doria (*l. c.*).

CENTROCOCCYX EURYCERCUS (Hay); Salvad. *t. c.* p. 78.

a. Bintulu, October 24, 1875. Iris crimson; bill, legs, and feet black, claws black.

INDICATOR ARCHIPELAGICUS, Temm.; Salvad. *t. c.* p. 61.

a. ♀. Bintulu. Iris indian-red; legs leaden green; bill dark horn-brown.

[The only time that I have seen this bird, which appears to be very rare; it was shot during the N.E. monsoon.—A. E.]

MEGALÆMA CHRYSOPSIS, Goffin.

Chotorhea chrysopsis, Salvad. *t. c.* p. 32.

a. ♂. Tagora, May 1875. Iris warm brown; bill black; legs and feet dark lead-colour, tinged greenish.

[The rarest of the Barbets in Sarawak. I have procured it on the Matang mountains, but have not seen it anywhere else than here and at Tagora.—A. E.]

MEGALÆMA DUVAUCELI (Less.).

Xantholæma duvauceli, Salvad. *t. c.* p. 38.

a. ♀. Bintulu. Iris dark brown; legs pale green.

[Found everywhere in Sarawak. A difference between the sexes is observable when they are pairing, the male showing the patch of black on the throat larger and darker than the female; and in the latter the black of the forehead is less pure and glossy than in the cock bird, which also slightly exceeds his mate in size. In the male one testis is of normal shape and large, the other is smaller and globular.—A. E.]

CALORHAMPHUS FULIGINOSUS (Temm.); Salvad. *t. c.* p. 39.

a. ♂ immature. Tagora, May 3, 1875. Legs pinkish red; iris neutral tint. A mixture of seeds and insects in the gizzard.

[Generally distributed, occurring as high as 1000 feet elevation on Sirambu.—A. E.]

XYLOLEPES VALIDUS (Temm.); Salvad, *t. c.* p. 43.

a. Bintulu. Iris orange; bill greenish brown, the lower mandible yellow; feet light greenish brown.

LEPOCESTES PORPHYROMELAS (Boie); Salvad. *t. c.* p. 48.

a. Sibu, Feb. 18, 1875.

This is probably rather rare, as neither the Marquis Doria nor Mr. Wallace obtained specimens.

CALLOLOPHUS MENTALIS (Temm.); Salvad. *t. c.* p. 49.

a, b. ♂ ♀. Bintulu. Iris crimson; bill black, the lower mandible lead-colour; feet dull grass-green.

TIGA JAVANENSIS (Ljung); Salvad. *t. c.* p. 54.

a. ♂. Santubong Bay, May 1875. Iris dark brown; legs olive-green; bill black.

[This species appears to be rare or local, as I have never met with it before.—A. E.]

PALÆORNIS LONGICAUDA (Bodd.); Salvad. *t. c.* p. 22.

a. ♂. Bintulu, pairing. Outer ring of iris white, inner ring dark greenish; bill deep scarlet, the tip yellow, lower mandible sooty brown; feet greenish lead-colour. Crop full of fruit.

b. ♀. Bintulu. Iris yellowish white, inner ring dull green; bill dark brown; feet greenish.

BRACHYURUS GRANATINUS (Temm.).

Pitta granatina, Salvad. *t. c.* p. 242.

a. ♂. Bintulu. Iris brown; bill black; legs and feet leaden blue.

[Shot in swampy old jungle close to the sea-shore.—A. E.]

BRACHYURUS MOLUCCENSIS (Müll.).

Pitta cyanoptera, Salvad. *t. c.* p. 235.

a. ♀. Bintulu, Nov. 28, 1875. Iris dark brown; bill wood-brown; legs and feet purplish grey.

b. ♂. Bintulu, Nov. 5, 1875. Legs pale greyish horn-brown; bill blackish brown.

c. ♂. Bintulu. Legs and feet pinkish white.

BRACHYURUS MUELLERI (Bp.); Salvad. *t. c.* p. 240.

a. ♀. Jilalong branch of Bintulu river. Iris brown; bill blackish brown, dusky orange about the gape; legs purplish grey.

TIMELIA MACULATA, Temm.; Salvad. *t. c.* p. 211.

a. ♀. Bintulu. Iris yellow; bill black; legs and feet leaden grey.

b. ♀. Bintulu. Iris naples-yellow; legs bluish lead-colour.

c. ♂. Bintulu. Iris yellow (clay); feet and legs bluish leaden grey.

d. ♂. Bintulu. Iris naples-yellow; legs leaden blue.

[Common in the vicinity of Bintulu in old jungle, but not observed elsewhere by me in the district of Sarawak. —A. E.]

TIMELIA NIGRICOLLIS, Temm.; Salvad. *t. c.* p. 212.

a, b. ♂. Bintulu. Iris crimson; legs blackish lead-colour; bill black, the lower mandible leaden grey.

Macronus ptilosus (J. & S.); Salvad. *t. c.* p. 216.

a, b. ♂. Bintulu. Iris crimson; bill black; preorbital naked skin blue; legs brown.

c. ♀. Bintulu. Iris crimson; bill black; legs blackish brown.

[Found in the second-growth jungle, and in the thickets of *lalang* grass, generally in pairs.—A. E.]

Cyanoderma bicolor (Blyth); Sharpe, Ibis, 1876, p. 40.

a. ♂. Bintulu. Iris crimson; skin of neck and about the eyes blue; bill dark bluish black; legs pale greyish brown.

[Found in similar situations to *M. ptilosus.*—A. E.]

Mixornis borneensis, Bp.; Salvad. *t. c.* p. 205.

a. ♂. Bintulu. Iris yellowish white; bill black, the lower mandible leaden grey; legs leaden grey.

Drymocataphus capistratoides (Temm.); Salvad. *t. c.* p. 218.

a. ♂. Bintulu, Dec. 1, 1875. Iris orange-brown; bill black, the under mandible pale lead-colour; legs leaden brown.

b. ♂. Bintulu. Iris burnt sienna; legs dark brown.

c. ♂. Sibu, Feb. 28, 1875. Iris crimson; legs leaden.

Turdinus leucogrammicus (Temm.); Salvad. *t. c.* p. 217.

a. ♂. Bintulu. Iris dark brown; legs very dark lead-colour.

Brachypteryx umbratilis (Temm.); Salvad. *t. c.* p. 220.

a. ♀. Labang, Bintulu. Iris dull indian-red; legs and feet blue lead-colour.

Malacopteron majus, Blyth; Salvad. *t. c.* p. 225.

a, b. ♂ ♀. Sibu, Feb. 28, 1875. Iris dark pink; bill leaden; legs lead-blue.

c. ♂. Bintulu. Iris indian-red; legs bluish lead-colour.

[Gunong Trahn, Sibu, Bintulu. Always in old jungle; beetles found in stomach; in the male, testes pale yellow, globular, equal in size. The *M. magnum* also inhabits the old forest, and is common near Tagora and at Bintulu.—A. E.]

MALACOPTERON MAGNUM, Eyton; Salvad. *t. c.* p. 226.

a. ♂. Bintulu. Iris crimson; bill dark brownish; legs pale whitish leaden grey.

b, c. ♂ ♀. Tagora. Iris indian-red; bill black, the lower mandible whitish lead-colour; legs and feet pale pinkish leaden grey.

BRACHYPTERYX MALACCENSIS, Hartl.; Salvad. *t. c.* p. 222.

a, b. ♂ ♀. Bintulu. Iris crimson; legs pinkish white.

[These birds haunt the undergrowth of the old jungle, and never inhabit the high trees.—A. E.]

TRICHIXOS PYRRHOPYGUS, Less.; Salvad. *t. c.* p. 224.

a. ♂ ad. Bintulu. Legs and feet pale.

b. ♀ juv. Bintulu. Iris dark brown; gape yellow; legs pinky white; bill dark brown.

MALACOCINCLA RUFIVENTRIS, Salvad. *t. c.* p. 229.

a. ♀. Tagora, May 1875. Iris yellow-brown; bill smoky black, the under mandible leaden grey; legs pale horn-brown.

SETARIA AFFINIS (Blyth); Salvad. *t. c.* p. 231.

a. ♂. Jambusan.

b. ♂. Bintulu, pairing. Iris dark raw-sienna; legs bluish lead-colour; bill the same, culmen darker.

SETARIA PECTORALIS, Salvad. *t. c.* p. 233, tav. iv. fig. 1.

a, b. ♂ ♀. Bintulu. Iris light brown; bill black; legs pale purplish.

SETARIA ALBIGULARIS, Blyth; Salvad. *t. c.* p. 233.

a. ♂. Bintulu, pairing. Iris crimson; bill black; legs dark leaden grey.

COPSYCHUS PROBLEMATICUS, Sharpe, Ibis, 1876, p. 36.

a. ♀. Sibu.

The hen bird now sent fully confirms the distinctness of *C. problematicus* as a species, the blackish under wing-coverts and general darker coloration being very conspicuous.

[May be seen in all gardens and clearings in Sarawak, where it is always welcome, as it is one of the few Bornean birds that can boast some approach to a song. Observed on Matang and Sirambu at a height of over 1200 feet. The pairing-season is about March or April; and the nest is said to be placed in holes in trees; one brought to me at Santubong was scantily made up of roots and a little moss, and contained three eggs of a greenish tint, plentifully blotched with rich brown.—A. E.]

CITTOCINCLA SUAVIS, Sclater; Salvad. *t. c.* p. 252.

a. ♂. Bintulu. Iris dark brown; legs pale greyish brown.

b. ♀. Sibu, Feb. 28, 1875. Iris chocolate.

[Generally, but not abundantly, distributed in Sarawak, where it inhabits the old jungle. I have observed it on Sirambu at a height of 1000 feet.—A. E.]

MONTICOLA PANDOO.

a. ♀. Bintulu, Nov. 14, 1875. Iris dark brown; legs dark brown; bill black.

[This bird was shot during a gale of wind at the mouth of the Bintulu river.—A. E.]

The first occurrence of the species in Borneo; but it was decidedly a bird to be expected.

HYPSIPETES MALACCENSIS, Blyth; Salvad. *t. c.* p. 202.

a. ♀. Bintulu, Nov. 14, 1875. Iris warm yellow-brown.

b. ♀. Bintulu. Iris ochreous brown.

c. ♀. Bintulu. Iris orange-brown; legs dark wood-brown; bill very dark brown, paler on the lower mandible. Fruit in the stomach.

TRICHOPHOROPSIS TYPUS, Bp.; Salvad. *t. c.* p. 203.

a. ♂. Bintulu. Iris warm brown; bill bluish, tipped black; feet purplish lead-colour.

b. ♀. Bintulu. Iris orange-brown; feet brownish lead-colour.

[Observed at Sabu, Sibu, and Bintulu, at which latter place it is not uncommon in the old jungle. In a female shot Nov. 21, 1874, the ovarium and oviduct were found to be normal; *cæca coli* two, saccular, of moderate length, running backward, and adherent; gizzard full of orthopterous insects; tongue plain, very slightly slit at the apex. In the male the testes are globular, yellow, and nearly equal; kidneys equally developed. The gizzard in a male shot July 23, 1874, contained remains of neuroptera; and that of another male shot in Bintulu in November was crammed with the pulp and hard woody core of some wild fruit.—A. E.]

BRACHYPODIUS IMMACULATUS, Sharpe, Ibis, 1876, p. 39.

[Gunong Trahn, Tagora, Sibu, Bintulu, &c. This bird is sufficiently common in many parts of the territory, affecting open spaces with their thickets of second growth rather than the old forest. I found them abundant in March 1875 at Jambusan, flying about all through the heat of the day, and usually in pairs. They are very restless, never settling long in one place, and continually utter a sharp clicking note as they fly. A female killed at Trahn in June had the stomach full of a fruit resembling red currants. The tongue is plain, with apical slit. Observed at a height of 3000 feet on the Matang mountains.—A. E.]

CRINIGER PHÆOCEPHALUS (Hartl.); Sharpe, Ibis, 1876, p. 40.

a. ♀. Tagora, May 1875. Iris burnt sienna; legs bright horn-brown.

TRICHOLESTES MINUTUS (Hartl.); Salvad. *t. c.* p. 205, tav. v. fig. 1.

a. ♂. Tagora, May 1875. Iris pale sepia-brown; bill pale leaden; legs and feet light yellowish brown.

CRINIGER GUTTURALIS (Bp.); Salvad. *t. c.* p. 206.

a. ♂. Labang, about 40 miles up the Bintulu river. Legs purplish; iris indian-red; bill dirty lead-colour.

b. ♀. Bintulu. Iris orange-brown; legs and feet yellow-brown; bill blackish, pale at base. Fruit in stomach.

These birds, along with *Trichophoropsis typus* and *Hypsipetes malaccensis*, are all found together in tolerable abundance in the swampy jungle skirting the coast.

IORA SCAPULARIS, Horsf.; Salvad. *t. c.* p. 190.

a. Kuching.

b. ♂. Jambusan. Iris white; legs and bill pale leaden.

c. ♂. Santubong bay. Iris white; legs dark leaden grey.

[Extremely common at Santubong, Rejang, Bruit, in the shore-jungle and *Casuarina*-belt, and also at Belidah and Sibu in second-growth jungle; and I have observed it on the Sirambu mountains at a height of 1000 feet. The iris is white or yellowish white; culmen and tip of maxilla slaty black, rest of beak bluish; legs and feet leaden blue; *cæca coli* small, ellipsoid, adherent; tongue triangular, pointed, and finely slit along its anterior margins; testes minute (July), pyriform, yellow. A female shot on a *Melastoma*-bush at Sibu in August had the gizzard full of minute coleoptera; in a male shot at Belidah in July the stomach contained seeds and various small insects.—A. E.]

PHYLLORNIS CYANOPOGON, Temm.; Salvad. *t. c.* p. 194.

a, b. ♂ ♀. Bintulu.

[Tolerably common.—A. E.]

PHYLLORNIS SONNERATI (J. & S.); Salvad. *t. c.* p. 193.

a, b. ♂ ♀. Bintulu. Iris brown; bill black; feet dark lead-colour.

PHYLLORNIS VIRIDINUCHA, sp. n.

P. affinis *P. icterocephalæ,* sed capite postico nuchâque viridescentibus nec sordide aurantiacis distinguenda. Long. tot. 6·7, culm 0·7, alæ 3·25, caud. 2·7, tarsi 0·65.

a. ♂. Bintulu. Iris dark brown; bill jet-black; legs greenish lead-colour.

b. ♀. Tagora, May 1875.

Mr. Everett has brought a pair of this *Phyllornis,* which differs from the allied *P. icterocephala* from Malacca and Sumatra in having the back of the neck greenish, this latter colour extending onto the crown, and leaving only the fore part of the head yellow. In *P. icterocephala,* of which I have a good series now before me, the whole crown is bright yellow, shading off into dull orange on the nape. The females of the two species are very different, that of the Bornean bird being quite green above. Count Salvadori duly notices the differences between the above-mentioned birds, but does not consider them specific. As, however, they are very constant in a large series, I think it better to give the Bornean bird a name.

Phylloscopus borealis, Blas.

Phylloneuste javanica, Salvad. *t. c.* p. 244.

a. Tuban branch of Bintulu river. Iris brown; bill brown, the lower mandible yellow; legs and feet pale sienna.

b. ♀. Bintulu. Iris brown; legs pale transparent brown. I am indebted for a determination of this species to Mr. H. Seebohm.

Prinia superciliaris, Salvad. *t. c.* p. 249.

a. ♀. Bintulu. Iris brown; legs warm brown.

[Lives in the thick *lalang* grass.—A. E.]

Orthotomus atrigularis, Temm.; Salvad. *t. c.* p. 249.

a, b. ♂ ♀. Bintulu. Iris dark ochreous; legs pale brown; bill darker brown.

Having compared the pair collected by Mr. Everett with Malaccan examples of *O. flavo-viridis,* Moore, I have no doubt as to their identity; and at the same time, as these birds are referable to the Bornean *O. atrigularis,* Temm., the latter title consequently becomes the oldest name for *O. flavo-viridis.*

Mr. Everett has not met with this species before. As might be expected, the sexes are not "similar," as stated by Temminck, but are in reality quite different, the female wanting the black throat, and having the tail rather more distinctly marked with a subterminal spot of dark brown.

Acrocephalus orientalis (T. & S.); Salvad. *t. c.* p. 251.

a. ♂. Bintulu. Iris pale wood-brown; legs lead-grey; bill horn-brown; interior of gape orange. Diptera in gizzard. Procured during the N.E. monsoon.

Prionochilus everetti, sp. n.

P. similis *P. obsoleto,* sed supra saturate brunneus, nec olivaceo lavatus: gutture brunnescente, nec albo, et rectricibus externis concoloribus distinguendus. Long. tot. 3·7, culm. 0·4, alæ 2·25, caudæ 1·3, tarsi 0·55.

This apparently new species is closely allied to *P. obsoletus* of Timor, but differs in being darker above, in having the throat and breast brownish instead of white, and especially in the absence of white tips to the outer tail-feathers.

PRIONOCHILUS XANTHOPYGIUS, Salvad. *t. c.* p. 162.

a. ♂. Bintulu. Iris warm sienna-brown; legs dark grey.

b. ♂. Tagora, May 1875. Iris warm brown; bill black.

[From the distance of the above-named localities it may be inferred that the species is found over the whole of the Sarawak district; but it is certainly one of the less common of these little birds.—A. E.]

PRIONOCHILUS THORACICUS (Temm.); Salvad. *t. c.* p. 163.

a. ♂. Bintulu. Iris yellowish brown; bill black; legs dark lead-colour.

Apparently rare, as Mr. Everett has never previously met with the species.

PRIONOCHILUS MACULATUS (Temm.); Salvad. *t. c.* p. 164.

a. ♀. Bintulu. Iris purple-red; bill black; legs blackish lead-colour; lower mandible lead-colour.

b. ♂. Bintulu. Iris "dragon's-blood" red.

[Food in stomach, pulp of the wild fig (*Arar*). Common throughout the Sarawak district.—A. E.]

DICÆUM TRIGONOSTIGMA (Scop.); Salvad. *t. c.* p. 166.

a. ♂. Bintulu. Iris dark brown.

b. ♂. Santubong Bay.

DICÆUM CHRYSORRHŒUM (Temm.); Salvad. *t. c.* p. 168.

a. ♂. Bintulu. Pairing. Iris crimson.

b. ♀. Jambusan. Iris orange; legs leaden.

ÆTHOPYGA EUPOGON, Cab.; Salvad. *t. c.* p. 173.

[This bird is pretty common throughout Sarawak, both on the sea-coast and inland, particularly affecting the "second-growth" jungle.—A. E.]

CHALCOSTETHA INSIGNIS (Jard.); Salvad. *t. c.* p. 177.

a. ♂. Bintulu. Iris warm brown.

This species is apparently rare in Borneo, as Mr. Everett has never fallen in with it before in the course of seven years' residence in the island. Doria and Beccari also procured but a single specimen.

NECTAROPHILA HASSELTI (Temm.); Salvad. *t. c.* p. 177.

a. ♂. Bintulu. Eyes brown; bill and legs shining black.

This bird, which is very common in Mr. Low's Labuan collections, is by no means plentiful in Sarawak. Mr. Everett has procured it once at Marup, and once again at Bintulu.

ARACHNOTHERA CHRYSOGENYS, Temm.; Salvad. *t. c.* p. 181.

a. ♀. Bintulu. Iris dark chocolate; bill of the darkest brown; legs light purplish brown. Hard-seeded fruit in gizzard.

ARACHNOTHERA LONGIROSTRIS (Lath.); Salvad. *t. c.* p. 186.

a. Bintulu. Iris brown.

b. Bintulu. Iris dark brown; bill black, under mandible leaden grey; legs dark blue lead-colour. Hard-seeded fruit in gizzard.

ANTHREPTES MALACCENSIS (Scop.); Ibis, 1876, p. 43.

The stomach of this bird is generally found to contain fruit; sometimes hard seeds, and sometimes small larvæ are met with. It frequents gardens and second-growth jungle, and is distributed everywhere in Sarawak.

ANTHREPTES SIMPLEX (Müll.).

Arachnophila simplex, Salvad. *t. c.* p. 172.

a. ♀. Bintulu.

CYORNIS BANYUMAS (Horsf.); Salvad. *t. c.* p. 130.

a. ♂. Bintulu. Iris dark brown; bill black; legs pale brownish lead.

b. ♀. Bintulu. Legs purplish leaden grey.

HYPOTHYMIS AZUREA (Bodd.); Salvad. *t. c.* p. 133.

a. ♂. Bintulu. Iris dark brown; bill blackish blue.

[Rather a rare bird in Sarawak, not often obtained.—A. E.]

RHIPIDURA RHOMBIFER, Cab.

Leucocerca perlata, Salvad. *t. c.* p. 136.

On examining the three specimens sent by Mr. Everett, we have come to the conclusion that they are distinct from

Sumatran *R. perlata* (Müll.), the latter having the back ashy brown, not slaty blackish, and having the inner secondaries tipped with white, a feature not shown by the Bornean bird.

PHILENTOMA PYRRHOPTERUM (Temm.); Salvad. *t. c.* p. 138.

a, b. ♂. Bintulu. Iris crimson; bill black.

PHILENTOMA VELATUM (Temm.); Salvad. *t. c.* p. 138.

a, b. ♂. Bintulu. Iris crimson; bill black; legs dark greenish black.

TERPSIPHONE AFFINIS (Hay); Salvad. *t. c.* p. 137.

a. ♂. Kabulo, Jilalong river.

b. ♂. Pandan, Bintulu river.

c. ♂. Bintulu. Iris dark brown.

d. ♂. Matang mountain. Iris chocolate; bill and legs blue.

e. ♂. Tagora, May 1875. Iris chocolate; bill dull cobalt; eye-wattle bright cobalt.

[Generally distributed in Sarawak, both in lowlands and on the hills. Observed on Matang mountains at an elevation of 1000 feet. These birds appear to pair in December. A Malay name is "Penchuri kapas," or "cotton-thief," in allusion to the long white plumes of the male. The testes are dark grey.—A. E.]

LANIUS LUCIONENSIS, L.; Sharpe, Ibis, 1876, p. 43.

a. ♂. Bintulu, Nov. 4, 1875. Iris chocolate-brown; bill black, the lower mandible pale lead-colour, tipped with black; legs dark leaden grey, claws black. Green *Mantis* in the gizzard.

b. ♀. Bintulu. Iris dark chocolate; bill dark purplish brown; legs bluish lead-colour.

[According to my experience this bird only appears during the N.E. monsoon. The specimen mentioned in the former paper (*l. c.*) was killed in November; and these now recorded were shot within a few days of the same date as the first one. —A. E.]

PERICROCOTUS CINEREUS.

a. ♂. Coast of Bintulu. Iris brown; legs and bill black.

[Shot in the early part of the N.E. monsoon in the Casuarinas lining the shore of the Bintulu coast.—A. E.]

This is the first recorded occurrence of the species in Borneo.

Hemipus obscurus (Horsf.).

Myiolestes obscurus, Salvad. *t. c.* p. 156.

a. ♂. Bintulu. Iris dark brown; bill and feet jet-black.

b. ♂. Bintulu. Iris chocolate.

Pityriasis gymnocephala (Temm.); Salvad. *t. c.* p. 159.

[One of the rarest birds in Sarawak. I saw one specimen at the mouth of the Skarang river; and my hunters were so fortunate as to come across a large flock on the hills near Marup, out of which they secured a dozen specimens (April 1871). After each discharge of the guns the flock returned to the same spot until a wounded bird cried out, when they all flew off. An examination of the contents of the gizzards in several individuals, showed that their food consisted of arboreal Orthoptera, cockroaches, beetles, and some large green larvæ. In one of the males the testes, which are yellow, were as large as ordinary peas, the left being the larger; in the others the organs were of the usual dimensions. None of the females exhibited enlarged embryos in the ovaria. The *cæca coli* were present and were non-adherent. In two of the male specimens the auricular patch was red instead of black, although they were apparently mature birds.—A. E.]

Dissemurus brachyphorus, Temm.; Salvad. *t. c.* p. 154.

a. ♀. Matang, June 1875. Iris brownish red.

[Universally distributed and very common.—A. E.]

Platysmurus aterrimus (Temm.); Salvad. *t. c.* p. 279.

a, b. ♂ ♀. Bintulu, Oct. 1875. Iris crimson; bill and feet black.

[Procured also at Belida and Marup.—A. E.]

Oriolus xanthonotus, Horsf.; Salvad. *t. c.* p. 277.

a. ♂. Bintulu. Pairing. Iris crimson; bill burnt-sienna brown; legs leaden.

[Gunong trahn, Marup, Bintulu, &c. A female shot at

Sabu had the iris yellow-brown, the bill umber, and legs lead-blue. These birds feed on insects; and from the stomach of one I took a *Scolopendra*. The tongue is plain, with slight apical slit. Kidneys double.—A. E.]

. CALORNIS CHALYBEA (Horsf.); Sharpe, Ibis, 1876, p. 45.

a, b. ♀. Sibu Island. Iris in one crimson, in the other pale brick-red.

[One of the commonest birds of Sarawak. They are usually seen in flocks haunting the taller trees, in the holes of which they nest. A nest was brought to me at Liugga, placed inside the dry husk of a cocoanut which had been eaten through by a squirrel; the eggs were green-blue, spotted with brownish purple, chiefly at the larger end, where the spots formed a ring. The food of these birds consists in a great measure of small fruits and seeds. In an immature male, shot May 4, 1874, I found only the left testis developed, the right one being scarcely discernible; it was dark green, elongate, and about one third of an inch in length.—A. E.]

ARTAMUS LEUCORHYNCHUS (L.); Salvad. *t. c.* p. 140.

[Santubong Bay, Marup, Bruit, Bintulu. A scarce bird and very shy; frequents high trees, perching on the topmost twigs, and is generally seen in pairs. The flight resembles that of *Microhierax fringillarius*. When at rest these birds utter their only note, a kind of harsh croak. Observed also at Sibu, and at the mouths of the Katibas and Ibau, tributaries of the Rejang, the Ibau being some 130 miles from the sea by the course of the river.—A. E.]

EURYLÆMUS OCHROMELAS, Raffl.; Salvad. *t. c.* p. 108.

[A female, shot Sept. 4, 1874, had the stomach full of weevils. The *cæca coli* are two, rather large, infundibuliform. This bird is common over the whole territory, on the coast as well as inland.—A. E.]

CORYDON SUMATRANUS (Raffl.); Sharpe, Ibis, p. 48.

a. ♂. Jilalong branch of Bintulu river. Bill white, clouded dull crimson; iris pale brownish purple; legs and feet dark brown.

[Specimens procured at Busan, Sibu, and Bintulu. The gizzard always contains insects, usually beetles and Orthoptera.—A. E.]

CALYPTOMENA VIRIDIS, Raffl.; Salvad. *l. c.* p. 106.

a. ♂. Bintulu.

b. ♂. Jilalong branch of Bintulu river. Iris dark brown; feet pale green.

[Busan, Simaujan, Marup, Sibu, Bintulu, &c., also on the Matang mountains at 1000 feet. Birds shot in January were pairing, and had the stomachs full of the pulp and seeds of the common wild fig (*Arar*). Not an uncommon bird, but difficult to procure, as it affects tall trees, and its colour helps to conceal it at a short distance. The interior of the gape is yellow.—A. E.]

EURYLÆMUS JAVANICUS (Horsf.); Sharpe, Ibis, p. 48.

[Observed at Jambusan, Marup, Sibu, and Bintulu. The iris is yellow, and the legs pinkish white; but in a female obtained in October at Sibu the iris was bluish green, and the legs lead-grey. The gizzard of this specimen contained beetles only.—A. E.]

CYMBIRHYNCHUS MACRORHYNCHUS (Gm.); Salvad. *l. c.* p. 109.

a. ♀. Bintulu. Iris brilliant grained green; bill pale cobalt, lower mandible deep chrome; legs dark purplish blue.

[Abundant throughout Sarawak in the vicinity of the rivers, and especially in the upper Batang Lupar. Feeds on insects, seeds, &c. This is the "Rain-bird" of the Malays. A female shot in April was found to be laying. The nest—a rough pendent structure loosely put together with grass—is generally built over water; the eggs are white, speckled with faint red. A nest with with two young birds was brought in at Marup in April 1871. The birds differed, but, I think, were both females. They were entirely fledged, except on the throat, and agreed in having the head, back, wings, and tail sooty black, and the long white feathers over the shoulder tipped with yellow; but in the smaller individual each of the upper wing-coverts showed a yellow spot at its extremity. In both the rump was dull crimson; under coverts of tail pale brick-red; belly and breast greyish black, the feathers more or less tipped with reddish orange; bill dirty horn-yellow, clouded at the apex with brown; legs dull violet-blue; iris pale slaty brown. The gizzards were full of caterpillars, beetles, &c.; and in one was a small *Helix*.—A. E.]

TRERON CAPELLII (Temm.); Salvad. *t. c.* p. 285.

a. ♀. Kabulo, Bintulu. Iris dark brown; feet pure chrome, claws black; bill greenish.

PTILONOPUS JAMBU (Gm.); Salvad. *t. c.* p. 289.

a, b. ♂ ♀. Bintulu. Iris sienna-orange; bill deep chrome-yellow; legs crimson.

[Obtained by me only at Busan and Bintulu.—A. E.]

EUPLOCAMUS PYRONOTUS (Gray); Salvad. *t. c.* p. 307.

a. ♂. Bintulu, Oct. 28, 1875. Iris bright sienna-brown; legs and toes pale bluish lead-colour; bill pale dirty greenish white; cere blackish; papillose space round eye fiery crimson.

ARGUSIANUS GRAYI (Elliot); Salvad. *t. c.* p. 305.

a. ♂. Kidurong Bay, Bintulu. Iris dark greyish brown; bill white, tinged greenish; legs and feet coral-red, claws brownish; all the bare skin of the head dull ultramarine, but brighter on the throat.

b. ♀. Kidurong Point, Bintulu. Bill whitish; legs coral-red.

MELANOPERDIX NIGRA (Vig.); Salvad. *t. c.* p. 309.

a. ♂. Bintulu. Iris pale grey-brown; bill black; legs and feet lead-colour; testes dark green.

b. ♀. Bintulu. Iris dark brown; bill black; feet and legs leaden grey.

GLAREOLA ORIENTALIS, Leach; Salvad. *t. c.* p. 319.

a. Bintulu beach, Sept. 27, 1875. Found in flocks on the whole coast-line, and as far inland as Sibu Island and Marup. Migratory.

GALLINAGO STENURA (Kuhl); Salvad. *t. c.* p. 335.

a. Sibu, February 1875.

ARDEA PURPUREA, L.; Salvad. *t. c.* p. 345.

a. Bintulu, Oct. 23, 1875. Iris bright yellow; tibia and back of tarsus light greenish yellow, front of tarsus and upper surface of foot shining black, under surface of foot ochreous; bill dark horn-brown, the under mandible chrome-yellow; base of bill and naked skin, including the eyelids, greenish yellow.

[An uncommon bird in Sarawak, seen during the N.E. monsoon. The above specimen is a very young bird.—A. E.]

ARDETTA SINENSIS (Gm.); Salvad. *t. c.* p. 354.

a. ♀. Bintulu. Iris golden-yellow; bill bright yellow, tinged with green; the culmen black; legs yellowish green.

PORZANA PYGMÆA (Naum.); Swinh. P. Z. S. 1871, p. 414.

a. ♂. Silai, Bintulu. Iris pale brick-red; bill dull sap-green; legs dark greenish brown.

This Crake, which is doubtless a migrant from the Chinese coast, has never been procured in Borneo before.

MARECA PENELOPE (L.); Swinh. P. Z. S. 1871, p. 418.

a. ♀. Bintulu. Iris grey-brown; bill and feet dark greenish lead-colour.

[This was shot in November 1875 as it was swimming about in a small creek in front of the fort at Bintulu.—A. E.]

The present species is here recorded for the first time from Borneo, and is not included in Count Salvadori's work.

DAFILA ACUTA (L.); Swinh. P. Z. S. 1871, p. 418.

a. ♀. Bintulu, Nov. 18, 1875. Iris dark brown; bill blackish lead-colour; legs greenish lead-colour.

[Shot in the same creek as the Widgeon. A few Ducks visit Borneo during the N.E. monsoon, sometimes occurring as far in as Sibu.—A. E.]

As in the case of the Widgeon, this species is new to Borneo; it is doubtless only a winter migrant.

ANOUS STOLIDUS (L.); Salvad. *t. c.* p. 379.

a, b. ♂ ♀. Bintulu. Iris very dark brown; bill black; legs soot-brown.

[These birds are scarce on the Sarawak coast. The above pair made their appearance, along with two or three more, in a gale of wind during the N.E. monsoon.—A. E.]

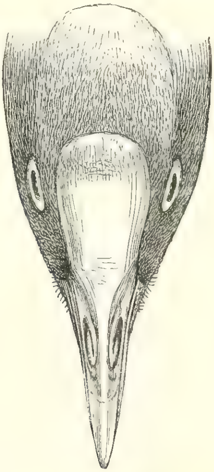
II.—*Description of a new Moorhen from the Hawaiian Islands.*

By THOMAS H. STREETS, M.D., U.S. Navy.

GALLINULA SANDVICENSIS, sp. nov.

Gallinula chloropus, Peale, Orn. U.S. Expl. Exp. p. 220.

G. Gallinulæ chloropodi sat similis, sed major, alis brevioribus, clypeo frontali multo majore, coloribus saturatioribus, abdomine concolori, campterio vix albo, tarsis antice rubescentibus.



Frontal shield of *Gallinula sandvicensis.*

Frontal plate very large, terminating square on the top of the head, much inflated, its posterior margin on a line with the posterior margin of the orbit; laterally it encroaches on the orbit, leaving but a narrow feathered space between them; the bill shorter than the head, thick, compressed; wings rather short in proportion to the size of the species when compared with other species of the same group; first primary shorter than second, the second and third of equal length, the rest graduated; tail short; tarsus rather long and stout, rounded in front, and compressed posteriorly; toes and claws long and robust.

The entire under surface of the body of one colour, which is a dark slaty; no marks of white on the abdomen; the head and neck all around much darker than the rest of the body, nearly black, with a slight brownish tinge; a few of the long feathers on the flanks with long spots of white on the superior web of the feathers; the edge of the wing at the bend, and the outer margin of the outer web of the first primary marked with a very constricted line of white; the under surface of the wings of the same colour as the underparts of the body; the longer under tail-coverts pure white, the rest black; the entire upper parts, including the upper surface of the wings and tail, olive-brown, the colour deepest on the rump, and fading out on the neck and on the exterior portions of the wings; the tips of the tail-feathers, and the shafts of the feathers, brownish black; frontal plate and bill bright crimson, the latter tipped with yellow; the tibia naked for about an inch, and surrounded by a bright crimson ring; a decided crimson blush on the front of the tarsus, the colour deeper on the sides; feet pea-green.

Total length about 13·50 inches; wing 6·50; tail 3; bill along the commissure 1·20, from the feathers on the side of the head 1, along the culmen, including the frontal plate, 1·65; breadth of the frontal plate 0·50; length from the margin of the feathers on the side of the bill 0·70; tarsus 2; middle toe and claw 3.

To sum up, the proportions of the bird and the quadrate form of the frontal plate show that its strongest affinities are with *G. galeata* rather than with any other member of the group; but the greater extent of the frontal plate, the shorter wing, the absence of white on the abdomen and on the under surface of the wing, as well as its reduction to a mere trace on the margin of the same, the more robust and different form of the tarsus, being broader and more rounded in front, as well as the great difference in the colour of the tarsus, separate it immediately from *G. galeata,* and render its identification easy. The characters just enumerated, in addition to its larger size and the quadrate frontal plate, separate it, *a fortiori,* from *G. chloropus.*

Habitat. Island of Oahu, Hawaiian Group.

The only direct reference to this bird which I have been able to find is made by Peale, in his 'Ornithology of the U.S. Exploring Expedition,' p. 220. He undoubtedly obtained a specimen from the island of Oahu; but the skin was lost. In the description, which he gives from his field-notes, he states it to be *G. chloropus,* Aud., i. e. *G. galeata.* The allusion which he makes, however, to the crimson-coloured tarsi identifies it with this species at once.

Gray, in his 'Hand-list of Birds,' gives the Sandwich Islands as a habitat of *G. chloropus,* Aud., as do also Hartlaub and Finsch, in the table of distribution of Central-Polynesian birds, which they give in the introduction to their work 'Die Ornithologie der Viti-, Samoa und Tonga Inseln.' It is very probable that both of these authorities based their statements upon Peale's original reference.

III.—*Notes on some Birds observed in the Chuput Valley, Patagonia, and in the neighbouring District.* By Henry Durnford*.

Hearing on the 25th October last that a steamer was to leave Buenos Ayres that afternoon for the Welsh colony at Chuput, I decided to accompany her, and having hastily packed the few things necessary, at 4 o'clock found myself on board the 'Santa Rosa,' lying in the outer roads. Our party consisted of three, my two friends being as anxious as myself to see a country so little known as Patagonia. The voyage, as regards ornithological occurrences, was to me full of interest; I only regret having been unable to procure any of the numerous species of Petrels which constantly accompanied us, with the exception of one, *Daption capensis*, so that, having a very slight acquaintance with this genus, I could only superficially observe such of them as we met with.

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* [The skins sent home by Mr. Durnford have been examined and determined by Mr. Salvin. The nomenclature used is generally that of the 'Nomenclator Av. Neotrop.' For general information concerning the Welsh colony of Chuput, see "Reports received by the Admiralty from Capt. H. Fairfax, R.N., of H.M.S. 'Volage,' upon the Condition of the Welsh Colony of Chuput in Patagonia" (Parl. Papers, No. 18, of 1876).—Ed.]

The mouth of the river Chuput, which we reached, after a stormy passage, early on the morning of the 31st October, is in lat. 43° 20′ S. For a distance of eight miles the course of the river lies in a westerly direction, after that taking a gradual bend to the S.S.W. Mr. Griffith and three or four of the colonists have penetrated to a distance of 250 miles by following the course of the river; and by their compasses, two of which they carried, they reckoned their furthest point was to the S.S.W. of the village. I mention these particulars because in some maps the course of the river is marked in a very different direction; the maps, as regards the river Chuput, of course, being merely the invention of the brain.

Forty-five miles above the village, and forty-eight from the sea, the river flows between precipitous rocks, in some places as much as 300 feet high, making travelling along its banks impossible; and such rocks were met with with more or less frequency up to the furthest point the colonists reached. The only bird Mr. Griffith saw during his trip which does not occur at the colony was a Kingfisher, one specimen of which was shot. The absence of this bird from the lower reaches of the river may perhaps be accounted for by the character of the water, which, for some distance above the colony, is always thick and muddy, whereas where he journeyed he found a clear stream.

The valley of the Chuput varies in breadth from two to nine miles, the greater portion of which is capable of cultivation to a distance of barely forty-five miles from the village. The geological nature of the surrounding country is such as to preclude the occurrence of very many species of birds, being very uniform in character. Extensive plateaux of dry stony land abound, for the most part very sparsely clothed with vegetation, with the exception of low stunted bushes, principally thorns, which find root everywhere and afford a plentiful supply of firewood, with here and there a cliff of tosca containing innumerable osseous remains of sharks, seals, small mammals, and fish, and which, if thoroughly examined, would certainly yield great results. At a higher elevation there are many extensive tracts of land clothed with coarse grass, the bushes only a foot or two in height and few in number; and these are the homes of large herds of Guanacos and Rheas. During my visit we made two hunting-excursions:—one to a tract of elevated tableland about fifteen miles to the south of the village, named by the colonists, from the absence of bushes, "Clear Land;" the other to Ninfas Point, some forty-five miles to the north-east of the colony. The latter is one of the principal hunting-grounds of the Tehuelche Indians; and here I saw for the first time a herd of about 200 Guanacos and numerous Rheas. The only bird which occurs here, and which I did not see at the colony, was *Sarcorhamphus gryphus*; and though Vultures on a close acquaintance are certainly not attractive, a Condor sitting nearly upright, partly supported by its tail, on the pinnacle of a lofty cliff overlooking the deep-blue waters of New Bay, was a picture to attract the eye of the most unobservant, and a fit accompaniment of a scene of such grandeur as one witnesses there.

The whole country (I speak from my own observation) within a twenty-mile radius of the village exhibits unmistakable traces of the action of the sea. Banks evidently once shingle, little hills precisely like the present sandhills on the coast, only clothed with thick bushes and numerous deposits of marine shells, can be seen in every direction. About two miles to the north of the village is a large lagoon, the water of which is brackish, evidently a lingering remnant of the ocean, from which it is now distant at least seven miles; the shores of this lagoon in some places are literally paved with marine shells.

With the exception of a few willows along the banks of the river, and some poplars which have been planted by one of the colonists, and which seem to thrive, the whole country is characterized by an entire absence of trees; and to this fact, coupled with the general flatness of the country, may be attributed the very light rainfall the colonists experience. During our visit, lasting a month, we had two or three light showers; and this we were informed was about the average.

From an old Indian burial-ground, at a distance of ten miles from the village, we disinterred the skeletons of two or three Indians, and some arrow- and spear-heads formed of flint from the same locality. Two skulls and the arrow-heads I preserved; the former are very similar to the heads of the present Tehuelche Indians, a small encampment of whom were at the colony during our visit. It is probable that before they came into possession of horses and dogs they lived on shell-fish and what they could secure with their bows and arrows, exactly as the Fuegians do now.

In addition to the birds included in the following list, I observed some which, from having obtained no specimen or other causes, were not satisfactorily identified; so I think it better only to mention them.

Twice during my visit I saw what I took to be a Harrier, about the size of *Circus cinereus*, but striped longitudinally with light and dark brown or black, the underparts lightest. It occurred on the sea-coast, and also on the tableland above the valley, perching on low bushes, and difficult of approach.

When staying up the valley I saw many times, and once had a shot at, a bird slightly larger than *Polyborus vulgaris*, and from its habits closely allied to that species; the only difference I could detect was that it appeared to be a little larger and of a heavier build, with the plumage generally of a lighter colour than in that bird.

Throughout the valley I many times observed some dark-brown Vultures, nearly as large as *Geranoaetus melanoleucus*, apparently of a uniform colour, but with the naked skin about the head red. This species is well known to the colonists, and feeds on dead horses, cattle, &c.

Amongst thick rushy ground in the neighbourhood of the river is found a Rail, which, from two examples observed, I should describe as exactly like an *Aramides* in plumage, with coral-red beak and feet, but not much more than half the size of that bird.

On the sandy flats surrounding a large lagoon about two miles north of the village is found an *Ægialitis* in considerable numbers, some of which, on the occasion of my visit, were, I think, breeding—the ovaries of one obtained containing eggs in a forward state. The skin of this bird was, unfortunately, eaten by a cat; and I had no opportunity of visiting the lagoon again. The day before sailing for Buenos Ayres I saw some large flocks of the same species on the coast about the mouth of the river. It was a little larger than *Æ. hiaticula,* with a broader and deeper chest-band of black than that bird has.

In the lagoon just mentioned, I saw several examples of a large Grebe, which I am pretty sure were *Podiceps major*; but as they kept in the deep water I had no opportunity of a shot.

Before concluding these remarks it affords me great pleasure to express my thanks to Mr. John Griffith, who throughout my visit kindly rendered me all the help he could, and to whom I owe the acquisition of many specimens. Having been a keen and accurate observer during an eight years' residence in the colony, he has made himself acquainted with most of the birds which occur in the district; and I found his information of great assistance.

MIMUS PATAGONICUS, Lafr. & D'Orb.

This bird is the Thrush of the river-Chuput district, and is not uncommon, being usually found near the base of the hills bordering the valley. Towards dusk, and from then till nightfall, it may be often seen sitting on the topmost twig of a bush, whence it unceasingly pours forth its song. This, though not to be compared to that of many of our British songsters, is especially welcome on the barren hills of Patagonia, where the silence amongst birds generally is remarkable. On the 21st November I found a nest in a thornbush, about four feet from the ground, and formed of twigs lined with feathers; it contained a chick, which had just left the shell, and one egg, on the point of hatching. Both parent birds showed great anxiety at my presence, allowing me to come within a few feet of them. They appeared to be precisely alike in size and plumage.

TROGLODYTES FURVUS.

Pretty common. The Chuput-valley Wren is smaller than any Buenos-Ayres examples I have seen. It has a slightly rufous tinge about the vent; but I do not think the difference sufficient to indicate that the species are distinct. Four eggs which I brought back with me are slightly smaller than eggs of *T. furvus* from here. It has been thought there may be two species of Wrens in Buenos Ayres; but this question can only be decided by the acquisition of more specimens. A slight discrepancy in size alone is not sufficient to establish another species. The Chuput bird is less than the smallest race, or whatever it should be called, of our Buenos-Ayres bird.

ANTHUS CORRENDERA*.

Common throughout the valley and on the hills where there was any grass.

PROGNE PURPUREA.

Pretty common about the Tosca cliff, up the valley, in the crevices of the rocks of which it was breeding. The male is uniform glossy steel-blue, and easily distinguishable from the female, whose underparts are speckled with grey, lightest about the vent. Both sexes uttered harsh screams whilst we were sitting under the cliff. A few seen at Ninfas Point.

ATTICORA CYANOLEUCA.

Pretty common. Nesting in holes in the banks in some of the upper reaches of the river.

HIRUNDO LEUCORRHOA.

Also common. On the evening of the 25th November I observed many birds of this species congregating as if for a migratory movement.

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* [Mr. Durnford's collection contains two specimens of this species, one from Punta Lara, the other from Flores, near Buenos Ayres. He has not sent any from Chuput.—O. S.]

SYCALIS LUTEIVENTRIS.

Common, usually in flocks. Its nest is of grass, lined with horsehair, and is placed in a tuft of grass or rushes close to the ground. The eggs are four in number. Very common at Ninfas Point.

ZONOTRICHIA CANICAPILLA*, Gould.

Abundant, both in the valley and on the hills, and often to be seen hopping familiarly about the colonists' cottages. It nests amongst coarse grass or brushwood, making an unpretending structure of the former material, the finer fibres being placed towards the interior. It lays four eggs, measuring ·8 by ·6 of an inch, of a pale green colour, thickly striated with light reddish brown spots, running into each other, and most numerous at the larger end. The eggs of the Chuput species differ from those I have from here of *Z. pileata* in the character of the markings, which are of a lighter colour and not so distinct, being more blotchy than in Buenos-Ayres examples. The nests are of precisely similar character.

AGELÆUS THILIUS.

Very common throughout the valley and in every patch of rushy ground. Though I did not discover a nest, birds were undoubtedly breeding in the neighbourhood.

STURNELLA MILITARIS.

One of the commonest birds in the valley, not being seen on the hills. On the 4th November I took a nest from a tuft of Pampas grass close to the river-bank, containing two eggs. It occurred in some numbers at Ninfas point.

MOLOTHRUS BONARIENSIS.

Not uncommon in the valley, frequenting willow-beds and clumps of brushwood.

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* [Mr. Durnford sends a single specimen of this species, which we have hitherto supposed to have been based upon the young of *Z. pileata*. We now see that it is fully entitled to specific rank; see Sclater's remarks, *infrà*, p. 46, where a figure of it is given, taken from Mr. Durnford's specimen.—ED.]

TÆNIOPTERA RUBETRA.

Rare. During my visit I saw only two examples, one of which I shot on the 6th November. It proved to be a male, with considerably enlarged testicles; and its stomach contained the remains of small beetles.

LICHENOPS PERSPICILLATUS.

Very common throughout the valley, nesting in the sides of tufts of Pampas-grass along the banks of the river. From three nests I found during my visit, in every case I flushed a rufous-plumaged bird. Here, and at Chuput, I have now dissected four rufous birds, which in all cases proved to be females, whilst two black specimens examined were both males. The black bird I have seen many times chasing the rufous ones; in fact one can scarcely take a walk in the country here during the spring, where there is any swampy land, without observing this.

HAPALOCERCUS FLAVIVENTRIS.

Not uncommon amongst the willows along the banks of the river.

ANÆRETES PARULUS.

Rare. During my visit I observed two pairs amongst thick bushes, and obtained a male and female; the former has a decided black crest. On the 7th November I took a nest from a thick thorn-bush, about three feet from the ground, composed of grass, warmly lined with feathers, and containing two eggs, white in colour, and measuring ·6 by ·4 of an inch.

CYANOTIS OMNICOLOR.

Pretty common in marshy places wherever the reeds grow to the height of three or four feet, and probably breeding, though I did not discover the nest. From its brilliant and many-coloured hues of plumage, this is one of the most attractive birds we have; and as it carefully works through every patch of reeds in search of insect food, now hanging head downwards from a spray, displaying its crimson crest, and the next minute running nimbly up a reed, it certainly reminds one of our Tits at home.

UPUCERTHIA DUMETORIA.

Not uncommon. On the 7th November I took a nest from the end of a hole in the bank of a dry lagoon near the village. This nest was formed of grass, lined with fur of the Patagonian cavy, and was placed about four feet from the face of the bank. The eggs were three in number, white in colour, much incubated, and measure 1·1 by ·9 inch.

PHLŒOCRYPTES MELANOPS.

Common in reed-beds, where I found it nesting, generally two or three pairs in the same place. The nest is an oval structure, from four to five inches in diameter, supported by reeds, of the finer sprays of which it is formed, strengthened with a little mud, and generally not more than eight inches from the ground. I have found as many as five eggs in one nest, though four is the usual number; and they differ from all other eggs of this genus I have seen in being of a uniform glossy blue colour, instead of white.

SYNALLAXIS SORDIDA.

SYNALLAXIS PATAGONICA.

Common everywhere. The nesting-habits of these two species have puzzled me exceedingly. I will state the facts as they occurred. On the 1st November I shot a female *S. patagonica* from its nest, which was nearly circular in shape, a small hole near the top communicating with the interior, which was about twelve inches in diameter. The nest was formed of sticks, and was a very large structure for so small a bird; it was lined with feathers and wool, and placed in the centre of a thick bush. It contained three white eggs, measuring ·7 by ·5 of an inch. In its immediate vicinity were other nests of precisely the same character, the owners of some of which I saw, and which were certainly *S. patagonica*. Two eggs from one of these nests measured ·8 by ·6 of an inch. On the 20th I flushed a *S. patagonica* from a nest in a different locality. This nest was nearly round in shape, and the interior reached by a narrow circular passage of sticks attached to the top of the nest, from which it projected about twelve inches; the inside diameter was not more than nine inches; but with these exceptions it was exactly like the nests found on the 1st inst. The eggs, two in number, are of the same length as the last mentioned, but slightly broader. There were several nests of the same character, viz. with a passage, in the neighbourhood.

On the 26th I shot a *Synallxis sordida,* which proved to be a male, at the same time seeing another leave one of the nests without a passage.

The result of these observations may be shortly summarized as follows:—

We have two distinct classes of nests of *Synallaxis,* which we will call A and B (A being those having no passage to the nest, B those with this addition), both common, both built in precisely similar places, but those of one class never found in the vicinity of those of the other. In three or four instances *S. patagonica* is seen to leave nests classed A, and in one case a nest classed B. A *S. sordida* in one instance is seen to leave a nest classed A. The eggs from two A nests differ ·1 of an inch in length and breadth from each other; and seen lying side by side it is difficult to imagine they can both belong to the same species; at the same time two eggs from a B nest, and from which a *S. sordida* was flushed, are of the same size as the larger sitting of eggs from one of the A nests. These apparent discrepancies are difficult to reconcile. Can it be that the two species construct nests of such very different characters, and that each is parasitic on the other?

Both have very similar habits, when frightened creeping into the thickest part of the bush, and when driven from that shelter only flying as far as the next one.

SYNALLAXIS HUDSONI, Scl.

Not uncommon. Found in dry places in the valley, but not seen on the hills, and appears to live on the ground. On the 5th November I shot a male.

HOMORUS GUTTURALIS.

On the 27th November I saw a pair of these birds on the hills about four miles to the south-west of the village, and shot the female bird. My attention was drawn to the spot by seeing a large structure of sticks in the centre of a bush, which proved to be the nest, and which measured about three feet in diameter, nearly round, the interior being reached by a passage from the top, circular in shape, formed of small twigs, and about twelve inches in length. On my approaching the bush both birds uttered harsh and noisy screams, hopping anxiously about the nest; both had elongated feathers on the crest of the head, which they erected to show their displeasure at being disturbed; and the only difference I could detect between them was that these feathers were slightly the longest in the male bird. The nest was apparently not quite completed, the interior having no lining but small twigs. The stomach of the female contained the bones of a small mammal; and in its ovary was an egg nearly ready for exclusion.

STENOPSIS BIFASCIATA.

Rare; the only specimen seen I found on the hills about four miles to the south of the village. On dissection it proved to be a female, with eggs in a forward state in the ovary. To the colonists this species is known as the "shy bird," in consequence of its vigilance in eluding pursuit; for though when flushed it never flies very far, it always seeks the shelter of a small bush, squatting flat on the ground; and from its peculiar zigzag mode of flight, it is difficult for the eye to follow it.

CONURUS PATAGONUS.

A flock of about thirty of this Parrot frequented the Tosca cliff up the valley, a few of which were breeding in the crevices, having chosen the most inaccessible part of the cliff for that purpose. The greater number during the day were to be seen about the river, sometimes as much as fifteen miles from their stronghold; these always kept in a compact body, returning before dusk to roost on the cliff. They fed on the young leaves of a species of thorn, the stomach of one shot on the 24th November being crammed with these.

NOCTUA CUNICULARIA.

Common. Nesting in holes in the ground.

CIRCUS CINEREUS.

Common in the valley, not seen on the hills. In flight it is very quick and graceful: few birds are a match for this Harrier; and as it sweeps rapidly over the ground, now scarcely clearing the tops of the high grass, and the next minute rising to drop on some luckless victim, it is impossible not to admire its great strength of wing. The stomach of one shot on the 24th November contained the remains of a freshly killed *Thinocorus rumicivorus*. To the colonist it is well known; and more than one person assured me it nested on the ground amongst long grass, and laid two white eggs; my search, however, for the nest was unsuccessful. Legs, feet, and irides pale orange.

GERANOAETUS MELANOLEUCUS.

Not uncommon, especially in the upper part of the valley. On the 9th November I shot a female from the nest, on a ledge high up in a Tosca cliff, thirteen miles north-west of the town, and after considerable difficulty secured the two eggs, which are of a dirty white colour, very slightly speckled with brown, and measure 2·6 inches by 2. As they contained chicks about to be released from their prisons, I conclude two is the number of eggs usually laid. On a subsequent visit to the same cliff, and also to one in its immediate neighbourhood, which, from its peculiar shape, the colonists have named the "old castle," I found several nests of previous years, all of the same character, viz. a structure of sticks some three feet in diameter and fifteen inches in depth, the inside being lined with a few straws.

BUTEO ERYTHRONOTUS.

Not uncommon on the hills, but very shy. Whilst riding on the 18th November from Ninfas Point, and about seven miles from the colony, I found a nest on the top of a bush, some nine feet from the ground, containing two chicks, apparently about a fortnight old. The nest was a large structure of sticks, lined with a variety of materials—bits of skin from dead cattle, hare's fur, some horse-dung, and a few straws. This nest measured three feet in diameter. Whilst looking at the two old birds on the wing, and standing beneath them, I could detect no difference between the male and female; and I wounded one, which unfortunately fell too far off for recovery. In the hope that the remaining bird, which, after its mate was shot, rose to an immense height in the air, would continue to feed the young ones, I left them, intending to return on the first opportunity, which I did on the following day but one, and after sitting fruitlessly under the nest for four hours, during which time I saw nothing of the old bird, I resolved to take the chicks. From their starved and weak appearance, I am inclined to think their remaining parent had deserted them, especially as the whole time I sat under the nest they kept constantly uttering a plaintive note, not unlike that of young chickens when in search for their mother. They were covered with a snow-white down, with the exception of their wings and back, where a few rufous feathers were commencing to show themselves. The cere is dark slate-colour, legs and feet pale orange, irides dark brown. During my stay at the colony I visited several other nests of this bird, but found them empty, nor could I again get a shot at an old bird, as before I could get within range they would invariably leave their post of observation and soar to an immense height in the air. The colonists have designated this bird the "white horse:" whilst it sits motionless on the top of the highest bush it can find, its white underparts are seen from a considerable distance, and, when they are searching for their horses and cattle, frequently deceive them.

TINNUNCULUS SPARVERIUS.

On the 8th November I obtained two pairs about the Tosca cliff up the valley, and shot a male bird. On the 15th I observed it at Ninfas Point. At the former place it was breeding; and during a second visit, on the 24th inst, I found a nest in a slight cavity high up in the face of the cliff, composed of sticks, but containing no eggs; it was probably also nesting at Ninfas Point. Seen on the wing at the same time as *Progne purpurea*, both birds anxiously circling and screaming over my head when their nests were threatened, in rapidity of flight it almost rivalled that bird, and, if not quite so quick in turning, in a fair straight race it would certainly not be behind the Swallow. To the colonists it is no friend, as it often carries off their young chickens.

MILVAGO CHIMANGO.

Very common, nesting on the tufts of pampa-grass. I frequently observed this species in flocks.

POLYBORUS VULGARIS.

Very common, nesting, like *Buteo erythronotus*, on the highest bushes, but making a much smaller nest than that bird. Fish-bones, cowhide, straw, and a piece of string were in the bottom of one nest I examined, whilst another had much the same miscellaneous collection.

SARCORHAMPHUS GRYPHUS.

A pair observed on the 15th November at Ninfas Point, the female of which I shot: its stomach was well filled with Guanaco- and Seal-flesh; and the stench from the bird was almost intolerable. The male was considerably the larger of the two, and the white frill round the lower part of its neck much broader than in the other sex. This bird is occasionally seen in the upper part of the valley; and when the colonists are hunting in the neighbourhood of the sea-coast, it is always the first of the numerous bird-scavengers to make its appearance after game has been killed; more than one of these men told me it was their firm conviction that it was attracted to the spot by scent, and not by sight, being rarely seen when nothing was killed.

PHALACROCORAX BRASILIANUS.

Common about the mouth of the river, and occasionally seen up the valley some distance from the sea.

NYCTICORAX OBSCURUS.

Not uncommon, during the day resting on the banks of the river under the shelter of the overhanging willows, and in the evening coming out to feed. The colonists call it the "barking bird," in consequence of its harsh cry.

PHŒNICOPTERUS IGNIPALLIATUS.

A small flock, consisting chiefly of adult birds in dark pink plumage, and a few in the paler immature dress, frequented the large salt laguna during my visit. I obtained one of the latter on the 11th November. Iris greenish grey.

CYGNUS NIGRICOLLIS.

Common throughout the valley.

CYGNUS COSCOROBA.

Occurs in considerable numbers, but is not so numerous as the preceding.

SPATULA PLATALEA.

Common throughout the valley. Usually found in shallow water. Nests in the neighbourhood of the colony.

QUERQUEDULA FLAVIROSTRIS.

Common. Often found along with *Dafila spinicauda* and *Spatula platalea*. Nests in the valley.

QUERQUEDULA VERSICOLOR.

Rare. During my visit I only saw two, male and female, which had been shot near the village.

QUERQUEDULA CYANOPTERA.

A few observed on the 6th November at the large salt lagoon, but not seen on any other occasion.

MARECA SIBILATRIX (Poepp.); Scl. et Salv. P. Z. S. 1876, p. 395.

Common throughout the valley and at the mouth of the river, at the latter place feeding on the extensive mussel-beds in company with *A. spinicauda*.

DAFILA SPINICAUDA.

The most numerous species of Duck, nesting in thick grass in the vicinity of the river. The colonists trap these birds at night when they come to feed on the wheat-stubbles. Found in large flocks feeding on the mussel-beds just outside the harbour.

Erismatura ferruginea.

A single bird shot on the 24th November in a ditch up the valley, was the only one I saw, though I was informed it was not uncommon.

Columba maculosa.

Common throughout the valley, being found in flocks about the wheat-stubbles, and breeding in the willows bordering the river.

Fulica leucopyga.

Very common. Found on almost every piece of water in the valley, but avoiding those where there is any current. Breeds numerously in the neighbourhood of the village.

Thinocorus rumicivorus.

Common. Seen most frequently on the higher stony plateaux, but occasionally in the valley. On the 3rd November, whilst Guanaco-hunting, we flushed two from a patch of dry sandy ground, some three hundred feet above the sea, and at least twelve miles from any water. During my visit this species was undoubtedly breeding in the neighbourhood, though I did not discover any eggs.

Vanellus cayennensis.

Common throughout the valley, breeding whilst I was there. Not seen on the hills.

Oreophilus ruficollis.

Common throughout the valley, frequenting the driest ground, and occasionally seen on the hills. A pair, observed on the 29th November in the dry bed of an old lagoon, amongt coarse stunted grass, from their actions, I am inclined to think, were nesting, though my search for eggs was unsuccessful.

Phalaropus wilsoni.

Common, swimming gracefully in the still pools formed by the eddies of the river and in nearly all the adjacent stagnant ditches. Usually seen in pairs.

Rhynchæa semicollaris.

Rare. I observed a single bird on the 27th November on some marshy ground close to the village, which I flushed a second time in order to be sure of the species.

TRINGA MACULATA.

Abundant in large flocks about the salt lagoon to the north of the village, and also on the sandy flats at the mouth of the river. In their movements and habits they closely resemble our ubiquitous *T. alpina* at home, flying in a body, suddenly wheeling round, displaying alternately their light underparts and dark backs, and usually raising their wings over their backs before alighting, which they all do at the same moment.

GAMBETTA FLAVIPES.

Common along the banks of the river and in the adjacent swamps and pools.

LIMOSA HUDSONICA.

During my visit a small party was always to be found in the shallow water at the west end of the large lagoon to the north of the village, feeding in company with *Tringa maculata* and a species of *Ægialitis*. On the 13th of November I shot two birds.

STERNA HIRUNDINACEA, Less.; Saunders, P. Z. S. 1876, p. 647.

During my visit a large flock frequented the banks of sand and shingle at the mouth of the harbour, and had increased in number when I left on the 29th of November. On the 26th I observed amongst the adult birds some Terns with grey foreheads and indistinct black hoods, their primaries and secondaries being marked with rufous brown, beaks dark lead-colour. As, with these exceptions, they precisely resembled the black-headed birds, I conclude they were *S. hirundinacea* in immature plumage. I obtained specimens in both plumages. Though these birds were apparently congregating for nesting-purposes, I could not learn from any of the colonists that their breeding-place was known.

LARUS MACULIPENNIS.

Common about the mouth of the river, and a few observed up the valley the first week of my visit. From some of the colonists I learned the following particulars concerning the nesting-ground, or rookery, as they term it, of Black-headed Gulls at New Bay, about forty miles from the village. About three miles east from Pot harbour, which is at the westernmost point of New Bay, and a short distance from the beach, on low sandy ground, is a breeding-place of Black-headed Gulls. The nests are placed close together; and three eggs is the number usually laid. I was assured by one of the colonists, an old whaler, who knows the coast well, that the birds commence to lay on or about the 10th December; and another colonist informed me that when on one occasion they were fishing in New Bay, they frequently went ashore to collect the eggs, which they prized as food, and this was about a week before Christmas; he also told me that amongst the Black-headed Gulls were a few pairs of a large black-backed Gull (which could have been nothing else but *L. dominicanus*) whose eggs they were also in the habit of eating. During my visit to the colony, *L. maculipennis* was frequently pointed out to me as the bird nesting near Pot harbour; and as that is the only Hooded Gull I saw, and is well known to the colonists, some of whom have visited the Gullery, I have little doubt my informants were correct.

I had one day made partial arrangements for a journey to Pot harbour, no slight undertaking, as water has to be taken for both man and beast for the journey to and fro, and was only prevented from completing them through being assured by the whaler mentioned above that he had many times visited the spot, and that the birds did not lay before the 10th December. This agrees with my observations, as just previous to and during the first ten days of my visit this species was far more numerous than when I left on the 29th November, on which date very few birds were to be seen.

Capt. Musters mentions that during his travels with the Tehuelches they came across a large Gullery in the neighbourhood of lagoons of considerable size a few leagues from the Cordillera, and, as far as I can make out, in about lat. 42° 50′ S. It would be especially interesting to know what species this could have been; for if *L. maculipennis* is regularly in the habit of nesting close to the sea, it would scarcely be found breeding so far inland.

LARUS DOMINICANUS.

Not uncommon about the mouth of the river, but seen also at Ninfas Point. I obtained specimens in both adult and immature plumage. Two adult birds from the river Chuput differ from an adult specimen from Buenos Ayres in the respective size of their beaks and tarsi, but otherwise they are precisely similar. The Buenos-Ayres bird is the larger.

PODICEPS ROLLANDI.

Common in almost every pool and ditch in the valley.

PODICEPS CALIPAREUS.

On the 6th November I saw two in the large lagoon to the north of Chuput, and during a second visit on the 11th was fortunate enough to find them again in a ditch bordering the lagoon, from which it was separated by a narrow strip of sand. Both of these I procured; and they proved on dissection to be male and female. The former is considerably the larger; the breast and stomach are of a purer white; the feathers on the crown of the head and throat are of a lighter grey; and those behind the eyes and ears, forming a sort of ruff, are longer than in the female bird. I did not observe this species again.

NOTHURA MACULOSA.

Not so common as *Calodromas elegans,* but occasionally seen amongst the thick grass and rushes bordering the river. Not seen on the hills.

CALODROMAS ELEGANS.

Common both in the valley and on the hills in very dry spots. It nests under the shelter of a small bush, and after scraping a slight hollow in the ground, lines it with a few fragments of grass and feathers, laying sometimes as many as ten eggs. The remarkable character of these, of a uniform pea-green colour, with a highly polished appearance, is well known. About dusk these birds come from the shelter of the long grass or bushes, where they have lain during the day, to feed; and at that time they can be heard calling to each other in every direction. Their note is a loud and oft-repeated whistle uttered in a low key.

RHEA DARWINI.

Common on the higher tableland, but rarely seen in the immediate neighbourhood of the colony. The feathers of this bird form the chief article of barter which the Indians give in exchange for yerba, sugar, &c. During my visit we made two hunting-excursions in search of Rheas and Guanacos. The former sometimes lie very close, usually under the shelter of a bush, and will then allow you to pass within a few yards of them without moving. When flushed they endeavour to run with the wind, partly opening their wings, which act as sails. It requires a good dog to overtake an old bird when he gets a start of a hundred yards. I was told that the colonists have found as many as thirty-two eggs in one nest, and when such a number is laid they consider them the produce of more than one female; they sometimes flush the male bird from the nest. It is an event of common occurrence to find single eggs about the campo smaller than those in nests; and these are supposed to have been dropped by immature birds which have not commenced to lay regularly.

IV.—*Note on the South-American Song-Sparrows.*

By P. L. SCLATER.

(Plate I.)

IT is a singular fact that, while *Zonotrichia pileata* is generally diffused over Central and South America, and is in many places a most abundant species, the only other two members of the same genus that occur within the neotropical region are confined to La Plata and Patagonia. So little known, moreover, are the latter, that, with a tolerably extensive acquaintance with South-American birds, I have never met with but

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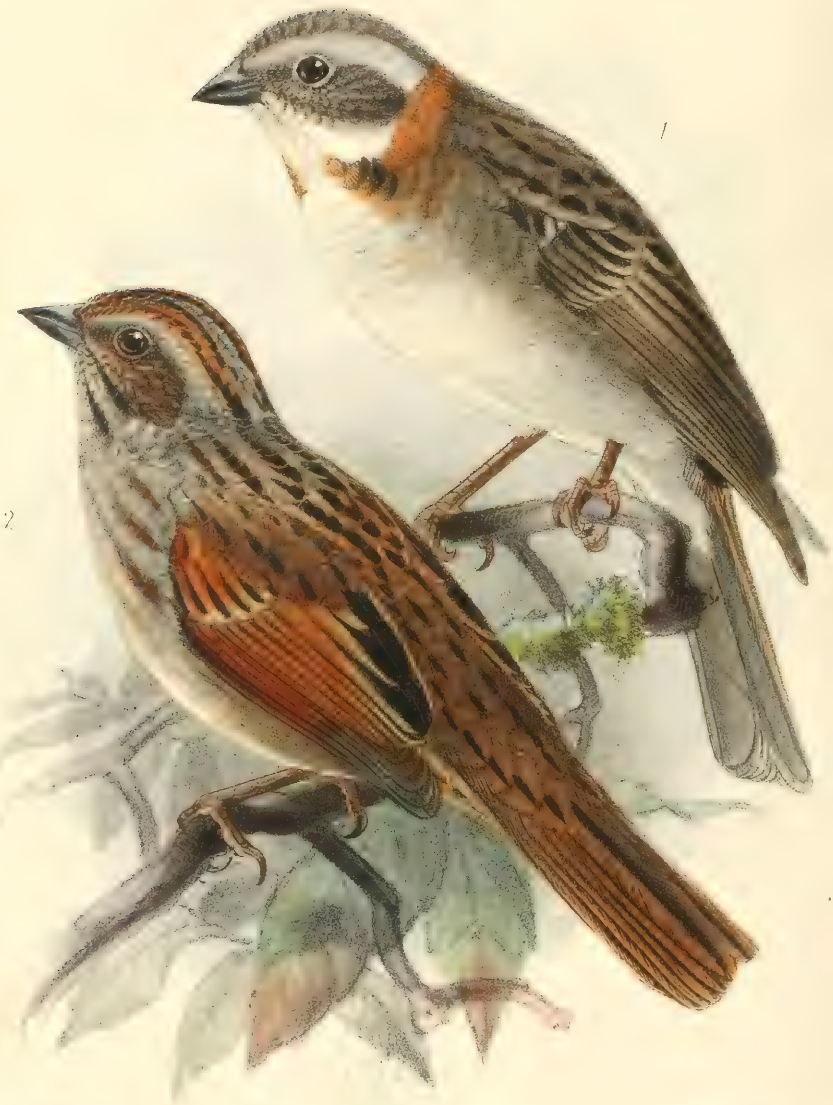

J. G. Keulemans lith. M & N Hanhart imp.

1. ZONOTRICHIA CANICAPILLA
2. " STRIGICEPS.

one or two specimens of either of them, whereas the former is one of the very commonest species in collections.

The two southern Song-Sparrows *Zonotrichia canicapilla* and *Z. strigiceps* were both discovered by Mr. Darwin during his celebrated "Naturalist's Voyage," and described by Mr. Gould in the third volume of the 'Zoology of the Voyage of the 'Beagle'.' I will say a few words about what we know of each of these birds.

Z. canicapilla is generally of the size and form of *Z. pileata*, though the legs and feet, judging from the examples now before me, are more slender. The under surface closely resembles that of *Z. pileata*; and there is the same bright rufous patch on each side of the neck. The upper surfaces of these two birds are also much alike, except as regards the head. This in *Z. canicapilla* is of a uniform grey, with narrow white superciliaries, and, as will be seen from the figure (Pl. I. fig. 1), shows no signs whatever of the two broad black lines on the sides of the crown which distinguish *Z. pileata*. Mr. Darwin obtained his specimens of *Z. canicapilla* at Port Desire, in Southern Patagonia, and on Tierra del Fuego, and found it nesting at the former locality. Mr. Durnford, as recorded above (p. 33), found it to be the "common Sparrow" of Chuput, which is a rather more northern locality than Port Desire. Dr. Cunningham obtained it at Ancud, in the Island of Chiloe, and at Sandy Point, in Southern Patagonia; but in our list of his collection (Ibis, 1870, p. 499) we did not recognize his skins as distinct from *Z. pileata*. I remark that in Gray's 'Hand-list' (ii. p. 94) *Z. canicapilla* is referred to *Fringilla australis*, Lath.; but in my opinion Latham's description is too vague to enable any certain conclusion to be drawn from it.

Z. strigiceps, as will be seen by the figure (Pl. I. fig. 2), is much more distinct from *Z. pileata* in plumage, and has shorter wings and more feeble feet, though not essentially different in form. It may at once be known from both the allied South-American species by the absence of the chestnut patches on the sides of the neck and of the lateral black marks on the throat. The feathers on the crown of the head are dark red, passing into cinereous on the nape, each feather having a median longitudinal band of black, which renders the specific term *strigiceps* very apposite.

Mr. Darwin gives as the locality of this species Santa Fé, on the Rio Paraná. It is singular that in all the collections from the Argentine Republic which I have examined of late years, I have never met with an example of it, the only specimen I have seen being one in my own collection, which I obtained in exchange from Mr. Gould some years ago, and which is probably one of Mr. Darwin's original skins. This, however, is most likely due to the fact that most of the Argentine collections have been procured from the vicinity of Buenos Ayres, and that Santa Fé, as pointed out by Mr. Darwin*, belongs to a different fauna.

V.—*Ornithological Letters from the Bremen Expedition to Western Siberia.* By Otto Finsch, Ph.D., Hon. Memb. B.O.U., Chief of the Expedition.

On board the steamer 'Beljetschenko,'
River Ob, 3rd July, 1876.

Sir,—I beg leave to send you a few notes relating to the birds observed by us during our recent trip through Western Siberia and into the northern parts of Turkestan and China.

Though we left Nishni-Novgorod on the 19th March, we did not reach Omsk until the 20th of April, the roads being in a bad state, owing to the forwardness of the spring, and the consequent melting of the snow. No opportunities offered for making any observations on the birds of the country passed through, except as regards the few species seen on the roadside. These consisted solely of European winter residents, such as *Corvus corax, C. cornix, C. frugilegus, C. monedula, Pica caudata, Emberiza citrinella, Pyrrhula vulgaris,* and Ducks and Swans in great numbers, which rested on the open water of every river and lake. Before reaching Tjumen, and between that town and Omsk, we observed *Tetrao tetrix* and *Lagopus alpinus* everywhere in great numbers. Of the former we met with a flock of about sixty or more. They were feeding on the road, and allowed us to approach within shot.

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* "In the morning we arrived at Santa Fé. I was surprised to observe how great a change of climate a difference of only three degrees of latitude between this place and Buenos Ayres had caused. This was evident from the dress and complexion of the men, from the increased size of the ombu trees—the number of new cacti and other plants, and especially from the birds. *In the course of an hour I remarked half-a-dozen of the latter which I had never seen at Buenos Ayres.* Considering that there is no natural boundary between the two places, and that the character of the country is nearly similar, the difference was much greater than I should have expected."—*Narr. Voy. Beagle*, iii. p. 147.

At Omsk we made the acquaintance of Professor Slovzoff, the most accomplished and diligent collector in Siberia. His collection, which forms the museum of the Military Gymnasium, contains a number of birds, all, however, belonging to European species. A fine specimen of *Gypaetus* came from the Balchasch, a species said to occur in the southern Altai. We did not ourselves meet with this bird of prey. Whilst here we obtained a specimen of *Parus cyaneus,* being the third seen by Professor Slovzoff during a nine years' residence at Omsk.

On leaving Omsk we travelled as quickly as possible across the steppe along the Kozakline to Semipalatinsk, where we arrived on the 29th of April. On the road we observed numbers of *Falco rufipes, F. cenchris, Circus cyaneus,* and for the first time *Alauda sibirica, A. tartarica, Motacilla citreola* (one only), *Charadrius gregarius, Otis tarda,* and *O. tetrax,* Cranes, and large flocks of Ducks, Geese, and Swans. We saw a single *Hæmatopus ostralegus,* a species we did not meet with again until reaching the Irtisch and Ob rivers. *Corvus cornix, C. frugilegus, C. monedula, Pica caudata,* and *Sturnus vulgaris* were everywhere common. The Crows and Magpies built their nests, in default of large trees, on bushes, sometimes only a few feet from the ground. *Corvus corone* we never saw, and the Raven only near woods. In the environs of Semipalatinsk we obtained *Saxicola leucomela, Phylloscopus tristis,* and *Cyanecula suecica* (with the maroon-coloured throat-spot); the same bird we afterwards found in the Chinese Altai and on the Irtisch.

On the 3rd of May we went to the Arcad Mountains, where we successfully hunted the Argali sheep. Under the escort of Kirgises we were conducted to where a man possessed a Golden Eagle (*Aquila fulva*) trained to hunt foxes and wolves.

Alauda tartarica was plentiful in the steppe, *A. albigula* and *A. brachydactyla* scarce. In the mountains we found *Anas rutila, Petrocincla saxatilis,* and a species of *Ruticilla* (?*aurorea*). From the Arcad we went to the large lake Ala-kul, by way of Sergiopol, where we arrived on the 7th of May, observing there for the first time *Cuculus canorus* and *Hirundo rustica*—the white-vented form, the only one we met with during our voyage. The Ala-kul is the resort of thousands of water-fowl; but it is difficult to shoot them, owing to the density of the reeds on the margin of the water. The more interesting species we observed were *Larus ichthyaetus, Pelecanus onocrotalus* (?), *Anas rufina,* and other Ducks, such as *Anas boschas, A. strepera, A. acuta, A. penelope, A. querquedula, A. crecca, A. leucophthalma,* &c. *Anser cinereus* was the only species of Goose we saw; and it had hatched its young on May the 9th.

Ardea alba, Recurvirostra avocetta, Himantopus rufipes, and *Grus cinerea* were not rare, nor were *Larus ridibundus* and *L. canus,* or a species allied to it.

Of small birds I saw *Saxicola rubicola,* numbers of Reed-Warblers, amongst them *Calamoherpe locustella* and the Black-capped Wagtail. I paid great attention to this last-named species throughout my journey. We first met with the grey-headed form (*Motacilla cinereocapilla*); afterwards, near a place called Karakol, the true *M. melanocephala,* living together with the former. Amongst the black-capped birds I also collected birds with the white superciliary stripe, a form which has also been separated specifically. On the Ala-kul *M. melanocephala* was most abundant, as also in the steppe region. Grey-headed birds, however, were nowhere absent.

A Lark we obtained is apparently *Alauda pispoletta. Turtur gelastes* breeds on the steppe, where also we procured *Turdus atrogularis,* though the whole region is destitute of trees. *Pastor roseus* was plentiful; but we did not find its breeding-place.

On leaving lake Ala-kul we went to Lepsa, at the foot of the Ala-taw Mountains—the mighty frontier between Russia and China. Thence we made excursions into the mountains, never being able to ascend to any great elevation on account of the snow.

We now found numbers of representatives of the Indian avifauna which we had not previously met with. Instead of the common Wagtail, which we still observed on the Ala-kul, we had the pleasure of seeing *Motacilla personata* in the streets of Lepsa, a species observed along the whole road through the Tarbagatai and Altai to Kolywan. In Barnaul *Motacilla alba* was again the only species. We also saw *Cinclus leucogaster*, a species of *Pica* (most likely *P. leucoptera*), the Himalayan *Fringilla caniceps*, a *Petrocincla* which I cannot make out at present, a species of *Columba* allied to *C. palumbus*, but distinct, a wonderful species of *Saxicola*, throughout black, except the head, which was grey. This bird was shot near the interesting Dscassyl-kul, an alpine lake, situated 5000 feet above the sea-level. We also met with *Cotyle rupestris*, *Carpodacus erythrinus*, a *Corvus* smaller than *C. corax*, but larger than *C. corone*, perhaps also new. From Lepsa we went back to the Ala-kul, and by the road of Urdscha-Bacty to the Chinese town of Tschugutschak, and thence crossing the Tarbagatai Mountains, which form the Russo-Chinese frontier, by the Bugutai pass to Saissan, where we arrived on the 30th of May. The greater part of our way lay through steppe region abounding with Larks. Our common species (*Alauda arvensis*) we found everywhere, even on the highest meadows of the Altai; also *A. brachydactyla*, and a species resembling *A. sibirica*, but larger, and which I cannot now determine; *A. albigula* was also there. *A. tartarica*, strange to say, was absent, disappearing before we reached Sergiopol; nor did we meet with this singular species again until we reached the desert-like steppe between Nor-Saissan and Maiterek, which is in character like the desert of Gobi, as we were told by people who know the latter.

A most welcome addition to our collection was a beautiful species of *Emberiza,* allied to *E. rutila,* but larger, and, so far as I can judge at present, *E. icterina.* This species, which we afterwards found on the north-western part of the Altai, behind Serianowsk, is almost restricted in its range to places where the peculiar steppe-grass, the Tschid, grows. I was surprised to find *Passer domesticus* to be the common Sparrow of all the villages.

During our second visit to Ala-kul we observed *Ibis falcinellus,* many Cormorants, apparently of the common species, *Grus virgo, Glareola torquata,* and on the steppe *Coracias garrula* and *Merops apiaster.* Near Urdschar the song of the Nightingale (*Luscinia philomela*) was heard in the willow trees, and a Butcher-bird was procured like *Lanius arenarius.* In crossing the Tarbagatai Mountains we had to traverse several plateaux with steppe-like character. We obtained the young of *Grus virgo,* and saw many Eagles, apparently *A. fulva* and *A. imperialis.* Ascending the Tarbagatai to Saissan, we found *Pastor roseus* abounding in the rocky ravines: one flock was estimated to contain a thousand birds; and a single shot killed twenty-five of them.

In Saissan, where we resided from the 27th to the 30th of May, I had only time to make one excursion to the rocky mountains which surround the little town. Dr. Brehm, however, and Count Waldburg made a trip with a Kirgis hunter to the Manrack Mountains, in order to shoot *Megaloperdix,* of which Dr. Brehm wae fortunate enough to secure one. It does not belong to the Altai species (*M. altaicus*), but may perhaps be the same as *Tetraogallus nigelli.* Some specimens of a fine species of *Ruticilla,* unknown to me, were secured, and a fine species of *Linaria,* apparently the same as the Himalayan bird. It was afterwards observed in the high Altai. During this time I shot *Muscicapa grisola,* the only species of Flycatcher seen during our whole journey; I also obtained *Saxicola leucomela,* a species of *Emberiza,* and a *Carpodacus* allied to *C. githagineus,* both apparently new.

From Saissan we went to the Kara Irtisch, and down this beautiful river to the Nor-Saissan, a magnificent lake, where birds abounded. Along the Kara or Black Irtisch we observed many Eagles, especially *Haliaetus albicilla*, and still more commonly *H. leucoryphus*. This latter species frequented the lake, where *Milvus melanotis* was also seen. A species of Goose I was unable to determine. It had a black bill, and might have been *Anser grandis*; but the size was too small. A large Gull I secured seems different from *Larus marinus*; and a *Panurus* which frequented the reed-beds may be *P. biarmicus*. In addition to these species I secured *Emberiza pyrrhuloides* and *Motacilla cinereocapilla*, with the white eye-stripe. The Eagles unfortunately were moulting, and did not make good skins.

After crossing the Nor-Saissan we had to traverse the desert-like steppe of Tarik, mentioned above. There one travels for hours without meeting with water, nevertheless we found *Alauda tartarica*, *A. brachydactyla*, and a *Lanius* allied to *L. phœnicurus*. This district also is one of the favourite resorts of *Equus onager*, of which we observed many individuals and procured a young one, which had been caught by a Cossack. Here we collected specimens of *Syrrhaptes paradoxus*, *Otis macqueeni*, *Pterocles exustus*, *Glareola melanoptera*, and for the first time the female of the *Emberiza* like *E. rutila*, mentioned above.

We reached Maiterek, a military fort in the southern Altai, on the 4th of June, and then made, in company with General Poltaratsky, the Governor of Semipalatinsk, an interesting excursion through the Chinese high Altai, which was somewhat marred by the badness of the weather. We experienced rain, snow, and very cold weather the whole time. We left Maiterek on the 6th of June, reached the interesting lake Marka-kul, 5000 feet above the sea, on the 7th, and, descending from the high pass (9000 feet) of Buricat to the valley of the Buchtarma, reached Altaiskesche Stanitza on the 11th, being here again on Russian territory. The unfavourable weather prevented our making the observations we should otherwise have done, and we saw comparatively few species of birds. In the more dangerous passes of the high mountains we observed the Himalayan *Linaria*, an *Anthus* like

A. aquaticus, Alpine Crows, apparently *Pyrrhocorax, Aquila fulva, Saxicola œnanthe* (but with a stouter bill), and, strangely enough, *Crex pratensis.*

The Marakul lake abounded with birds. I never before saw so many Eagles; and the number of *Milvus melanotis* was astonishing: on a single dead tree I counted fifteen. The Eagles belonged to *H. leucoryphus,* a species like *Aquila rapax,* but larger, *A. imperialis,* and *A. fulva.* I shot a singular *Regulus,* without a stripe on the crown, which may be new. Besides these we obtained *Motacilla citreola, Anthus pratensis, Turdus atrogularis, Sturnus vulgaris,* and a beautiful Bunting resembling *Emberiza pithyornis,* but different, and perhaps new. The lake was rich with waterfowl—*Anas rutila* (with young broods), *A. crecca, A. penelope, A. strepera, A. acuta, A. boschas, A. nyroca,* &c., *Podiceps cristatus* and *P. cornutus, Carbo cormoranus, Larus ridibundus, Sterna fissipes,* &c. We saw neither Geese nor Pelecans.

From Altaiskesche Stanitza we travelled as quickly as possible by way of Serianowsk Usdkamenogorsk to Barnaul, where we arrived on the 22nd of June. During this journey we travelled too fast to observe or collect much. Above Serianowsk I saw a peculiar Swift, larger than *Cypselus apus,* but with a white rump. Dr. Brehm has since been fortunate enough to secure a specimen at Salair, on the northern Altai, between Barnaul and Tomsk; and I do not doubt that the species will prove to be undescribed. When going on the river Irtsch, from Werchne Pristan to Kamenogorsk, we found a large colony of *Hirundo rufula,* the only time we met with the species during our voyage.

Near Barnaul we secured *Emberiza aureola,* which was very common, also *Larus minutus.*

I hope to find time to send you a further report on the birds observed during our voyage on the river Ob. At present we have only spent two days on this magnificent stream. I can only say that hitherto I have seen comparatively few birds; but the river is flooded. The extensive woods which border the river doubtless support a large amount of animal life; but we see little from the deck of our steamer.

On board the Lotka 'Bismarck,' on the
Ob river, Sept. 26th, 1876.

In my last letter I sent you a few notes on the birds observed during our trip through the north-eastern part of Turkestan, the north-western frontier of China, and the high Altai, which we were obliged, unfortunately, to cross in great haste; for I consider these regions of the greatest interest, and a most attractive country for naturalists in general, and especially ornithologists. I can only regret that we had to travel in such haste to reach our destination, the Ob region, as soon as possible. We left Barnaul, the capital of the Altai, on the 28th of June, and reached Tomsk, a distance of 435 versts, on the 1st of July. We chose the route of Salair in order to see the north-western part of the Altai Mountains. This region is covered with immense woods, and contains much animal life. But going always very fast in our carriage (called a tarantasse), we could only observe birds like flowers, on the road-side. In the woods we noticed a *Buteo,* the Raven, *Corvus cornix, Pica caudata, Cuculus canorus,* Starlings, *Carpodacus erythrinus, Turdus musicus* and *T. viscivorus,* and one or two species of *Phylloscopus* which I could not make out. From Salair to Tomsk the mountainous wood-region disappears; and in its place is a steppe of high grass, mixed with small clumps of trees (chiefly birch trees). Here *Falco vespertinus* (with young able to fly) is one of the commonest birds, together with *Pica caudata, Corvus cornix, Pratincola rubicola,* and *Emberiza aureola.* Occasionally I observed *Aquila imperialis, Falco tinnunculus,* and *Circus cyaneus*; and *Milvus niger* was by no means rare. The song of *Luscinia philomela* was often heard in the thick bushes, as well as that of *Sylvia garrula,* and the harsh cry of *Crex pratensis,* which was our regular night music during our whole tour through the Altai, even at the high elevations of more than 6000 to 8000 feet.

We embarked in the magnificent steamer 'Beljetschenko,' belonging to our friend Ivan Ivanovitsch Ignatoff, and left Tomsk at an early hour on the second of July. The steamers of this gentleman perform a regular service during summer between Tjumén and Tomsk, and are very comfortable; but, alas! the luxury of this excellent vessel availed us only for a short time.

We went down the river Ob (1300 versts), to the village of Samarowa, a short distance up the river Irtisch, not far from the junction of this river with the Ob. Here we had to leave the steamer; and by the liberality of Mr. Semzoff, a chief merchant of Samarowa, we were furnished with two "lotkas," free of cost, for our voyage down the river. A "lotka" is a boat about 40 feet in length, covered for its greater part with a deck, and is propelled by rowing or towing. During our voyage in the steamer we had few opportunities for making ornithological observations. The weather was not favourable and the river overflooded, so that it often resembled a great lake, bordered with woods of fir trees, and intermixed with numerous islets, covered chiefly with willows. Waterfowl were seen in great numbers, but so far off that we could not make out the species. *Larus marinus* and *Sterna hirundo* were plentiful. Sometimes we observed *Haliaetus albicilla* (once I got a fledgling); but the most common bird was *Cotyle riparia.* Every time we passed high sandbanks we found large breeding colonies, the inhabitants of which were busy flying in and out of nest-holes. The situation of the holes varies as the height of the bank; sometimes they are very high, at other times so low that one can easily touch the nests; but nevertheless it is very difficult to catch the bird by hand.

We left Samarowa in the early morning of the 6th of July, reaching the town of Berezoff on the 9th, and Obdorsk, the *ultima Thule* of civilization, on the 13th, the whole distance being reckoned at little more than 1000 versts. There are more than forty stations to be called at by rowing people, most of them only Ostiakian yurt-places for fishing, which is the chief and only business along the river Ob. The scenery on the river is nearly the same throughout the whole of its length. On the right hand the banks are high, often perpendicular, formed by sand, and covered with magnificent woods of larch and birch trees. The left bank is low, and is clothed chiefly with willows. As the river was very high, the low land on the left was flooded to a great degree, and we often went for long distances in narrow channels, or crossed meadow-grounds. Here waterfowl were very numerous, but shy. We distinguished *Anas acuta, A. clypeata, A. crecca, A. penelope,* and *A. fuligula*; Geese and Swans kept too far off to be made out. *Hæmatopus ostralegus* and *Numenius arquata* were not uncommon, but only in small companies. In the woods on the right bank we found *Corythus enucleator, Fringilla montifringilla, Sylvia garrula, Phylloscopus trochilus,* and *P. tristis,* the latter resembling in manner very much our *P. rufus.* No Flycatcher! no *Garrulus* or *Nucifraga*! Tits were heard only a few times, but not seen. Observations, indeed, are very difficult. After leaving Tomsk we suffered continually from mosquitos, and it was nearly impossible to leave the lotka. Even an English mosquito-garment was of no use; and the woods are so thick that no veil is of any benefit. The woods in general are silent; and if a bird is to be heard, it is still more difficult to see it in the thickness of the foliage and the underwood. The most common birds were *Corvus cornix* and *Pica caudata, Emberiza pusilla, Fringilla montifringilla, Motacilla alba,* and *M. cinereocapilla,* which were to be seen at every station. *Passer domesticus* and *P. campestris* are only to be found on stations where cattle live; both species occur in the town of Berezoff, but not in Obdorsk. *P. campestris* goes as far up as Kuschowat, the last Russian village between Berezoff and Obdorsk, but disappears during winter time, as both Sparrows do at Berezoff. *Hirundo rustica* we found two stations further up than Berezoff, and *H. urbica* only as far as Monastir Kondinsky, about 260 versts above Samarowa. At Tschematschefskaja, 130 versts from Kondinsky, we found *Picus minor* and *Turdus pilaris,* both with fledglings; and at Balschoi Ustram I got from an Ostiak two young of *Ulula lapponica.* At Kuschowat we first found *Fringilla linaria,* if I remember right, and for the last time saw *Pratincola rubicola. Emberiza schœniclus* we observed on the stations on the left bank everywhere where willow trees with swampy ground prevail; such localities are also occupied by *Motacilla citreola,* which we observed after leaving Tachty, a few stations below Obdorsk, and *Gallinago media.* As we descended the river the larger it became, the banks being sometimes out of sight. Waterfowl increased in number. Just before reaching Obdorsk we found a small colony of *Larus marinus* breeding. The Poluï river, on which Obdorsk is situated, swarmed with Ducks, among them *Œdemia nigra* and *Œ. fusca*; *Colymbus septentrionalis* was also very common.

After having engaged five men, furnished with provisions, we left Obdorsk on the morning of the 16th of July, bound for the Schtschutschja river, which we intended to ascend as far as possible, and thence to the Podarata river and the Kara Bay, these parts, lying between the Ob river and the Ural Mountains, never having been before visited by any zoologist.

We reached Janburri, an Ostiakian yurt-place to the east of the mouth of the Schtschutschja river, on the 18th of July, and with difficulty obtained two Samojeds to act as pilots up the river, as no one was acquainted with this part of the country, which is only visited by nomad Ostiaks and Samojeds and their herds of Reindeer. At Kiochat, a fishing-place on the right bank of the Ob, *Larus marinus* was plentiful, engaged in stealing fish from the nets. I here observed their singular habit of perching on dead branches of high trees. As soon as we reached the left bank we came to low flooded land, cut into many silent channels, bordered with low willow-scrub. Here *Motacilla citreola* was not uncommon, as also even *Phalaropus cinereus.* At Janburri Dr. Brehm shot *Anthus seebohmi,* discovered last year by Mr. Seebohm on the Petchora river, and of which new species I had been kindly provided with a description by my friend Mr. Dresser. A little above Janburri I got a species of *Calamoherpe,* peculiar in its manner and song, the latter being very sweet. As soon as we entered the Schtschutschja river we came into the tundra-region, except on the right bank, which is still covered more or less with woods. We observed *Otus brachyotus* and, for the first time, *Lagopus albus,* not yet in full summer plumage. *Totanus glareola* was the most common of its kind; and at the bifurcation of the river (20th July) Count Zeil shot a male *Terekia cinerea. Anthus cervinus,* in habits partaking both of *A. pratensis* and *A. arboreus,* was plentiful, as was also *Lusciola suecica.* Geese (*Anser cinereus*) were not rare, nor were Swans (probably *Cygnus musicus*); but we succeeded in getting only young in down, as well as young of *Harelda glacialis, Œdemia nigra,* and *Œ. fusca. Colymbus septentrionalis* was very common, but, as usual, very shy. We went up the river about 130 versts, where we found an Ostiak, with his family, who had lived here for about four years, engaged in fishery, as a small species of *Coregonus* (probably allied to *C. albula*), called "herring," is very plentiful. We had the good luck to engage this Ostiak as a pilot for the Podarata river, said to be about five days' journey on foot. We went further up the Schtschutschja river about thirty or forty versts, when navigation, except for small canoes, became impossible. On the 29th of July we had to leave the lotka, and went, a party of eleven men, furnished with provisions for nine days, to the Podarata river, where we expected to find reindeer; so we were told.

In the upper part of the river we observed *Tringa minuta,* which lives in the thick willow-brush and has a peculiar cry, *Saxicola œnanthe, Motacilla alba, Lusciola suecica, Charadrius hiaticula,* and, for the first time, *C. auratus.* Once we found the nest of *Tringa minuta* with four eggs, which hatched in a box with cotton, into which I had put them. *Larus marinus* and *Sterna hirundo* were common; of the latter we got young in down. *Phylloscopus trochilus* and *P. tristis* were observed as far as the wood-region extended, *i. e.* along the whole of the river. *Plectrophanes lapponica* and *P. nivalis* we found likewise on the upper course of the river. Of rapacious birds we observed the Osprey, *Falco subbuteo, F. æsalon, F. peregrinus,* and *Buteo lagopus,* all of them being rare. We left our lotka on the 31st of July, and sent it with two men back to a place called Tschornejar (high black bank), as the water was rapidly falling, and it would have been impossible to take the lotka back later in the season. We proceeded on foot, carrying our ammunition and provisions, and reached the Podarata river, which flows into Kara Bay, on the 2nd of August, having had the good fortune to meet on the road an Ostiak with his herd of reindeer, from whom we purchased nine animals and three sledges to carry our provisions. Of these animals we lost six, as the "milzbrand" was rapidly decreasing the herds of reindeer. The Ostiak had owned 2000 reindeer, a number now reduced to only 600; as many as eighty animals sometimes died in one night. At the Podarata river, by chance, we found a second Ostiak with reindeer, who promised to bring us to the border of the sea. We went there in reindeer-sledges in the afternoon of the 3rd of August, but to our great disappointment were obliged to stop at about from twelve to fifteen versts from the sea itself, of which we got only a glance. We reached a little above 68° N. lat. The land before us consisted of swampy ground, varied by numerous lakes and stagnant morasses, which gradually give place to the very low sea-shore. It was impossible to cross this tract, even with reindeer; and not being provided with a boat, and there being no wood with which to build a raft, we were obliged to return without reaching the shores of Kara Bay itself. We went back with the Ostiak to Tschornejar, on the Schtschutschja river, where we found our lotka on the 11th of August, although we had lost one of our men, an Ostiak and excellent fellow, who had died three days after having tasted the meat of one of the reindeer which had been struck by the incurable disease.

During the fortnight we were absent we had to cross only tundra-ground, covered with dwarf birches, dwarf willows, mosses, and morasses, and varied with larger or smaller lakes, and sometimes small rivers. Mosquitos swarmed all the time, by day and by night. I need not say how we suffered, the more so as provisions were scarce and, on account of want of fuel for fire, not easy to cook. Our principal attention was paid to *Lagopus albus*, which went about with fledged young, and *Charadrius auratus*, as both species formed the chief part of our meals. Once we got a family of Geese, an old female and six pretty-well grown young; the species was *Anser albifrons*! Generally Geese and Swans were rare, and the large lakes poor in animal life. Every lake was inhabited by one or two pairs of *Colymbus glacialis,* which went about with small ones, or with a number of pairs of *Harelda glacialis, Œdemia nigra,* or *Œ. fusca. Anas acuta,* with young, was observed on small tundra-creeks, as well as *A. penelope* and *A. crecca.* The most common tundra-birds, except *Charadrius auratus,* which was, with its downy young, to be found on every dry elevation, and whose cry was heard by day and by night, were *Lestris parasitica* and *L. pomatorhina,* both splendid-looking birds, resembling Falcons when on the wing. Of both species we found young, which on our return were already able to fly. The chief food of both species seems to be lemmings (*Myodes obensis*), which are plentiful. Besides these, *Larus marinus* was seen every day, but only in pairs, as they were hatching their young. On the borders of the lakes we found *Tringa subarquata, T. temminckii, Machetes pugnax,* all of them with young, as well as *Gallinago media,* which did not live in swampy grounds, but on the open dwarf-birch tundra. Of small birds *Plectrophanes lapponica* and *P. nivalis* (both with fledglings) were common, so also was *Anthus pratensis* and *A. cervinus,* the latter nearer to the wood-region, where *Fringilla linaria* again was to be found. *Otocorys alpestris* we observed often. On the Podarata river we again observed *Motacilla alba, Saxicola œnanthe,* and *Lusciola suecica* (all with young ones). Of rapacious birds *Falco peregrinus* and *Buteo lagopus* were often observed, and their nests, with three or four young in down, found. They were built on the high banks of the river, or on the bare ground of the tundra. The young had to suffer very much from mosquitos, which they swallowed in large numbers. *Otus brachyotus* was common; but the magnificent Snowy Owl (*Nyctea nivea*), a most splendid bird, we observed only a few times, and only one was shot by Dr. Brehm. *Charadrius morinellus* I observed only once, in small flocks, on the 7th of August, being apparently already migrating.

On returning to the Schtschutschja river, which we had to cross twice, we found animal life increased. We found again

Emberiza pusilla, Saxicola œnanthe, Lusciola suecica, Turdus pilaris, Fringilla linaria, Anthus cervinus, Cotyle riparia, and, nearer to the mouth of the river, *Corvus cornix* and *C. corax*; the latter we observed also a few times on the tundra. Geese and Ducks were in great numbers, but as shy as Swans, of which we got only half-fledged young, which were most welcome for our cooking-pan. At the place where Count Zeil shot *Terekia cinerea,* I had the pleasure of shooting a full-grown young one of this species, being only the second specimen seen during our whole voyage. *Phalaropus* we did not observe again; but *Larus marinus,* with young, now able to fly, was the most common Gull, as it is on the whole Ob river, where we never saw any *Lestris.*

We returned to Obdorsk on the 19th of August, where we had to stop till the 3rd of September, being engaged in drying and packing the collections, and making our reports. Near Obdorsk we observed large flocks of Geese (*Anser cinereus* and *A. minutus*) which we had already obtained on the Schtschutschja, and *A. ruficollis,* of which we got by chance only one specimen, although the species is by no means rare. The Poluï river swarmed with Ducks; amongst them we got our first young in down of *Fuligula marila* and *F. nyroca. Larus marinus* was common, as well as *L. ridibundus,* accompanied by young nearly able to fly. On the flooded waters near the village *Totanus fuscus* was not rare in small companies, being very tame. *Tringa temminckii* appeared in small flocks, bearing still the full summer plumage, whereas *Charadrius hiaticula,* which went also in large flocks, had already the winter garb. Of small birds *Motacilla alba* and *Anthus pratensis* were the most common in the village; *M. citreola* we got about 100 versts above Obdorsk, just moulting, as well as *M. flava* (*borealis*). Count Zeil got a single specimen of *Turdus atrogularis* (young bird moulting) and *Numenius arquata,* which feeds at this time chiefly on berries. *Nisus fringillarius,* so rare in this region, I observed several times near the village.

Our way up the river was very tedious, as we had to struggle continually against contrary winds and the current.

Besides, the nights were again dark, and often we were unable to proceed; even the weather was often cold and bad, and rains fell just as in the late autumn in Germany. So the distance we had gone down the river in eight days we required twenty-three days to pull the lotka against the stream, and did not reach Berezoff before the 12th, the village of Samarowa not until the 26th of September. The river had changed its appearance a great deal, as well as the whole landscape. Silent arms into which we had gone formerly were dried up, or had not water enough, except for Geese and Ducks; and the high right bank, formerly touched by the water of the river, was bordered by a broad strand of sand or clay, covered with enormous masses of drift wood. Large banks of sand had made their appearence, and sometimes divided the stream for long distances into two smaller arms. The foliage of the woods was wrapped in autumnal dress; the yellow and orange of the birch trees was varied by the red of the poplar and several smaller trees, intermixed with the light green of the larch (*Larix*) and the dark black-green of pine and cedar woods. So the view of the landscape was everywhere magnificent, and one could look at it for hours, even if the ornithological life sometimes was very poor, sometimes for a long while not a bird being seen. We had to land twice a day, in order to cook our meals, on a small Ostiakian yurt-place, or where we found it most convenient; there was now no want of wood. Every time we went on shore we went hunting for some hours, as, fortunately, mosquitos were no longer present. The woods sometimes are impenetrable, so thick is the growth of the trees, the multitude of broken trees and twigs. Generally the interior of the woods was silent, although we observed more birds than when we went down the river. At that time the birds were breeding, and so hid themselves more in the immense scrub and thickets, and were less visible than now, when they had more or less united in flocks preparatory to migration. We observed nearly all the birds we had seen on the trip down, except the Swallows and the Cuckoo, which had gone already. The call of the latter we had heard up to the

Schtschutschja river. *Emberiza pusilla* we left behind some stations above Obdorsk; but now we found *Parus cinctus* plentiful, and a *Parus* which I take to be *P. camschatcensis* or *P. borealis.* Its cry and manners are nearly the same as those of our *P. palustris*; but besides it has a short but melodious song. Between Obdorsk and Berezoff we first found *Sitta uralensis,* which in general was very scarce, and only seen in pairs. Besides these, *Picus tridactylus* was shot, occurring in willow- as well as in pine-woods; *Picus martius* was seen once; *Picus minor* was the most common species of Woodpecker. No *Certhia*! *Fringilla montifringilla* and *F. linaria,* both moulting and with young, went in large flocks and were to be met everywhere; but we did not see either *Corythus* or *Loxia. Corvus corax* was often met; but the most common Crows were *C. cornix* and *Pica caudata,* the latter chiefly in villages where cattle are tended. Here often twelve or fourteen assemble on the roof of a single house. At Berezoff I observed, for the first time on the Ob, a large flock of *Corvus frugilegus,* apparently wandering; and at the village Sucharowskaja, 120 versts down Samarowa, we first observed *Corvus monedula* and *Parus major. Nucifraga caryocatactes* was plentiful in the woods on the right bank. No *Garrulus*; but *Perisoreus infaustus* was sometimes obtained. It feeds on berries, beetles, and mice. We did not find *Passer campestris* at the village of Kuschowat, as the species is only a summer visitor there; but we found both species at the town of Berezoff, and here, besides, *Emberiza citrinella.* This species, which we had not once seen when going down the river, was now plentiful everywhere. Of birds of prey we observed sometimes the Osprey and a few Falcons (*Falco subbuteo,* and apparently a larger species, perhaps *F. gyrfalco*). Of Owls, Count Zeil shot a fine specimen of *Surnia nisoria,* which we had observed a few times previously. Once I saw a small *Falco æsalon* being chased by an *Otus brachyotus.* Having during our trip down the river only once seen *Tetrao bonasia,* which I shot near the village Malo Atlim, this species now was plentiful as soon as we left Berezoff. It is a most elegant bird, and although not shy, difficult to secure without the assistance of a good dog. *Tetrao tetrix* and *T. urogallus*, the Gluchar of the Russians, was sometimes observed, the former in large flocks of thirty and more. *T. urogallus* I once met in the woods, sitting very close to me on a dead tree; but I could not bring the bird down, being provided only with dust-shot. Hazel-Grouse hunting once brought us into great difficulty, as both Dr. Brehm and Count Zeil missed their way out of a wood, and on night overtaking them were obliged to remain where they were till the morning, when I, with as many Ostjaks as I could get together, went in search of them, and fortunately came up with them in a short time. Of Thrushes we found *Turdus pilaris* the most common species, but far less plentiful than in Lapland; *T. musicus, T. iliacus*, and *T. atrogularis* were rare; once I met a pair of *T. ruficollis* and shot one. *Fringilla linaria* and *F. montifringilla* we did not observe after the 24th of September, when we were amongst the willow-woods of the left bank. Even *Motacilla alba* had disappeared, *Anthus pratensis* was only seen sparingly, no *A. cervinus*; but *Otocorys alpestris* appeared in large flocks. The most interesting small bird was one I observed a few times from the 19th to the 21st of September; it was a Sylviine bird, resembling much in manners our Redthroat, but having the call-note of our *Ruticilla phœnicurus*. This note I had heard not unfrequently when we were going down the river; but now for the first time I caught sight of the songster, sitting on a low elder bush, and reminding me of the female of *Lusciola suecica*. On shooting the bird it proved to be the *Sylvia cyanura* of Pallas. I only once saw the male in its elegant garb. All the birds we shot during the last half of August, and until after the middle of September, were moulting. After about the 22nd of September we did not observe any more *Phylloscopus trochilus* or *P. tristis*, or *Anthus cervinus*. Geese and Ducks became scarcer as we ascended the river, although large flocks of Geese were still seen as late as the 25th of September, but sparingly, and not every day as during the first fortnight of September. No Cormorant was seen along the whole length of the Ob river! Gulls are always present.

Of *Larus marinus* mostly dark-coloured young ones are to be seen, and *L. canus* and *L. ridibundus*, bearing now their winter dress. *L. minutus* and *Hæmatopus ostralegus* we did not see after leaving Berezoff, nor the Crane, of which I got a half-grown young bird on the 7th of September. Large flocks of the last-named species were going south, and most of the birds are already emigrating and bidding farewell to the north. We are about to follow them, but in a western direction and more slowly; for we have still to travel about 2500 versts in a carriage to the first railway, at Nishni-Novgorod, which will, we hope, take us safely and quickly home.

VI.—*On the* Phylloscopi *or Willow-Warblers.*

By Henry Seebohm, F.Z.S.

The *Phylloscopi*, or Willow-Warblers, are a group of about thirty species of birds, the synonymy of which has hitherto been in much confusion. The differences between many of the species are very slight; and the descriptions of some of them are so meagre, that it is difficult to determine to which they belong without access to the type specimens. They may be described as Warblers with more or less slender bills, varying in the colour of their plumage from olive-green to brown in the upper parts, and from yellow, with an occasional dash of buff or green, to white underneath. Some of the stout-billed species have bills as large and broad as those of the smaller species of the genus *Hypolais*, whilst others have bills as small and slender as in the genus *Regulus*. Others, again, approach the more brilliantly coloured species of the genus *Abrornis*. It is possible that a careful study of the allied genera may lead to a rearrangement of the whole family; but this question must be left to a future paper. For our present purpose it will be enough to point out the following distinctions between the various sections of *Phylloscopus* and the members of the allied genus *Hypolais*:—

Hypolais. Bill larger, and pale underneath; no bar across the wings.

Phylloscopus (*Acanthopneuste*). Bill large, and pale underneath; one, and frequently two bars across the wings.

A. No mesial line on the crown.

1. *borealis* (Blasius).
2. *xanthodryas,* Swinhoe.
3. *nitidus,* Blyth.
4. *viridanus,* Blyth.
5. *tenellipes,* Swinhoe.
6. *plumbeitarsus,* Swinhoe.
7. *magnirostris,* Blyth.
8. *lugubris,* Blyth.

B. A mesial line on the crown.

9. *coronata* (Temminck).
10. *occipitalis* (Jerdon).
11. *trochiloides* (Sundevall).
12. *viridipennis,* Blyth.
13. *presbytis* (Müller).

Phylloscopus (*Phylloscopus.*) Bill slender, more or less dark underneath: no bar across the wings.

C. Axillaries and wing-lining buff.

14. *schwarzi* (Radde).
15. *fuscatus,* Blyth.
16. *umbrovirens* (Rüppell).
17. *indicus* (Jerdon).
18. *fuliginiventris* (Hodgson).

D. Axillaries and wing-lining yellow or white.

19. *sibilatrix* (Bechstein).
20. *trochilus* (Linnæus).
21. *gætkei,* Seebohm.
22. *bonellii* (Vieillot).
23. *collybita* (Vieillot).
24. *tristis,* Blyth.
25. *neglectus* (Hume).
26. *affinis* (Tickell).
27. *tytleri* (Brooks).

Phylloscopus (*Reguloides*). Bill slender, more or less dark underneath; two bars across the wing; a more or less distinct mesial line on the crown.

28. *superciliosus* (Gmelin).
29. *proregulus* (Pallas).
30. *erochrous* (Hodgson).
31. *subviridis* (Brooks).
32. *maculipennis* (Blyth).

The geographical range of this group seems to be confined to the Old World, one species only having hitherto been found in the western hemisphere, and that probably an accidental straggler on its first autumnal migration.

The principal points to be observed in determining the various species of this genus are:—(*a*) the size of the bill and the colour of the under mandible; (*b*) the size of the bastard primary (in the following description the exposed portion only is measured); (*c*) the wing-formula, especially the relation which the second primary bears in length to the other primaries; (*d*) the comparison between the lengths of the wings and tail; (*e*) the presence or absence of one or two bars across the wings, formed by the wing-coverts being paler in colour at their tips; (*f*) the presence or absence of a pale mesial line on the crown, which is generally accompanied by the intervening space between it and the superciliary streaks being darker than the back; (*g*) the colour of the axillaries and wing-lining; and (*h*) the colour of the tarsus and feet*.

In some cases colour alone can be relied upon to determine the species; and the difficulty is increased by the great seasonal changes to which both the upper and underparts are subject. The autumn plumage of most of the species, more especially that of birds of the year, is very yellow, sometimes approaching buff, which frequently disappears entirely in the breeding-plumage of old birds, especially in the colder latitudes. The bars on the wing, and the mesial line on the crown, are occasionally indistinguishable when the plumage has become much abraded. There is also considerable variation in size between individuals of the same species, and especially between the sexes. An average variation in the length of the wing of the males will probably be about a quarter of an inch. The largest females are usually equal in size to the smallest males; and as the females vary equally in length of wing, the total margin of variation between the smallest female and the largest male is half an inch—a very great variation in the length of the wing of such small birds.

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* The comparative lengths of the tail-feathers does not seem to be a character of much value. Most of the species of this group have the tail both rounded and forked: *i. e.* the two outer and the two centre feathers are the shortest.

Where the dimensions given in the following descriptions do not show so much variation, it may arise from my not having been able to procure access to a sufficiently large series.

In order satisfactorily to determine the various species of this genus, an acquaintance with the birds in a state of nature seems more than ordinarily necessary; and this is probably the reason why this group has not been brought into better order by our cabinet ornithologists.

The following attempt to reduce this refractory genus into something like order is the result of the comparison of about four hundred skins from the collections of the British Museum, Lord Tweeddale, Canon Tristram, Messrs. Dresser, Swinhoe, Brooks, von Homeyer, the Indian Museum, and my own collection.

I am especially indebted to my friends, Mr. H. E. Dresser for assistance in working out the intricate details of the synonymy, and to Mr. W. E. Brooks for skins of various Indian species, which have been carefully compared with Blyth's types in the Calcutta Museum.

In the synonymy I have carefully avoided the pedantry of a long catalogue of useless references; and I have endeavoured to make the descriptions of the birds as short and as easy of comparison as possible. Much remains to be done in the geographical distribution; and doubtless a few years' researches may detect many errors in, and make some additions to, our present knowledge of this interesting group of birds.

1. PHYLLOSCOPUS BOREALIS (Blasius).

Sylvia (*Phyllopneuste*) *eversmanii,* Middendorff, Sib. Reise, p. 178 (1851, nec Bonap.); Radde, Reisen im Süd. v. Ost-Sibir. ii. p. 263 (1863, nec Bonap.).

Phyllopseustes eversmanii, Homeyer, Cab. Journ. f. Orn. 1872, p. 202 (nec Bonap.).

Phyllopneuste borealis, Blasius, Naumannia, 1858, p. 313.

Phyllopseustes borealis, Meves, Cab. Journ. f. Orn. 1875, p. 429.

Phylloscopus sylvicultrix, Swinhoe, Ibis, 1860, p. 53.

Sylvia flavescens, G. R. Gray, P. Z. S. 1860, p. 349.

Phylloscopus hylebata, Swinh. J. A. S. Beng. xxiv. p. 265 (1861).

Phyllopneuste kennicotti, Baird, Trans. Chicago Ac. Sc. i. p. 313 (1869).

Obs. Phyllopneuste javanica (Horsfield), mentioned by Blasius (Ibis, 1862, p. 66) as this species, or one very closely connected with it, is pronounced by Sclater and Finsch (Ibis, 1873, p. 475) to be a *Zosterops*.

Bill large, under mandible pale.

Upper parts greyish brown, dashed all over, especially on the rump, with yellowish green. Wings and tail greyish brown, with the outside edges of each feather broadly margined with yellowish green. Superciliary streak extending to the nape.

Head the same colour as the back.

Underparts nearly white, slightly dashed with yellow and grey on the breast and flanks. Axillaries, wing-lining, and thighs pale yellow. After the autumn moult the whole of the underparts are pale yellow, dashed with grey on the breast and flanks.

Third and fourth primaries longest. Fifth considerably shorter. Sixth very considerably shorter still. *Second intermediate in length between the fifth and sixth.*

The bastard primary very small. The exposed part measures ·3 to ·35 in adults, and ·4 to ·45 in birds of the year.

First wing-bar distinct. Sometimes traces of second wing-bar in birds of the year.

Length of wing—male 2·70 to 2·55, female 2·55 to 2·40.

Length of tail—male 2·00 to 1·90, female 1·90 to 1·80.

Legs and claws brown.

This species breeds in the north of the palæarctic region, at or near the limit of forest-growth, and in a similar climate in the subalpine districts of Southern Siberia. It passes through China on migration, and winters in the East-India islands and the islands surrounding the Burmah peninsula. It unites an extreme south-eastern winter-range with a wider northern range than that of any other species of the genus. Collett has recently obtained it in Finmark; and it is not uncommon in summer at Archangel (*Alston* and *Harvie Brown*, Ibis, 1873, p. 61). It has been shot at Mesen (*Piottuch* in Mus. H. Seebohm) and on the Petchora (*Seebohm* and *Harvie Brown,* Ibis, 1876, p. 216). Skins collected by Dr. Dybowski near Lake Baical are common in collections. Middendorff (*fide* Meves) found it as far east as Okotsk. Prjevalski found it in the breeding-season in S.E. Mongolia; and in Dresser's and Lord Tweeddale's collections are skins from Japan. It has been obtained on migration at St. Michael's, in Norton Sound (*Dall* & *Bannister,* Trans. Chicago Ac. Sc. i. p. 278), and as far west as Heligoland (*Gaetke,* Ibis, 1862, p. 66). Swinhoe (Ibis, 1860, p. 53) describes this species as passing in great numbers through Amoy in spring and autumn, and notices (Ibis, 1866, p. 295) its abundance in the island of Formosa in October. It has not been found wintering so far west as Calcutta or Ceylon; but I have identified skins from Labuan, N.W. Borneo (*Low* in Brit. Mus. and Mus. H. Seebohm), Gilolo (*Wallace* in Brit. Mus.), Timor (*Wallace* in Brit. Mus.), Flores and Ternate (*Wallace* in Mus. Lord Tweeddale), Batchian (*Wallace* in Brit. Mus.), and South Andaman Islands (*Wardlaw Ramsay* in Mus. Lord Tweeddale). On the mainland it has been found at Malacca (*Maingay* in Mus. Lord Tweeddale) and in the Tenasserim provinces (Stray Feathers, ii. p. 478).

The very small bastard primary of this species serves to distinguish adults from every other species of the genus, except *P. sibilatrix,* with which bird it cannot possibly be confounded. Birds of the year approach *P. xanthodryas* very closely, but have not quite such a large bastard primary, nor quite such a large bill.

I have not been able to obtain any authentic information respecting the nest or eggs of this species.

2. PHYLLOSCOPUS XANTHODRYAS, Swinhoe.

Phylloscopus xanthodryas, Swinhoe, P. Z. S. 1863, p. 296,

Bill large, under mandible pale.
Upper parts yellowish olive-green. Superciliary streak greenish yellow.
Head the same colour as the back.

Underparts, axillaries, and wing-lining greenish yellow, greyer on the breast and flanks.

Third and fourth primaries longest. Fifth a shade shorter. Sixth, seventh, and eighth each considerably shorter than the preceding. *Second primary equal to or a shade longer than the sixth.*

Bastard primary moderate, the exposed parts measuring ·5 to ·6.

First wing-bar distinct, rudiments of upper bar.

Length of wing 2·85 to 2·65.

Length of tail 2·15.

Legs and feet light brown.

Very little is known of the geographical distribution of this species. In the British Museum is one skin from Japan, obtained by Capt. St. John at Hakodadi. Prjevalski records it as breeding in Camsu, and states that *P. borealis* does not breed there—a very interesting fact, as birds of the year of that species which happen to have an unusually large bastard primary are so much like *P. xanthodryas* as to suggest a doubt of the distinctness of the two species. Swinhoe found it at Amoy, in China, in spring, no doubt on migration; and I have one skin obtained by Mr. Low at Labuan, N.W. Borneo, in winter.

The nest and eggs of this species are unknown.

3. PHYLLOSCOPUS NITIDUS, Blyth.

Sylvia hippolais, Jerdon, Madras Journ. xi. p. 6 (1840, nec Linn.).

Phylloscopus nitidus, Blyth, J. A. S. Beng. xii. p. 965 (1843).

Regulus nitidus, G. R. Gray, Gen. B. i. p. 175 (1848).

Abrornis nitidus, Bp. Consp. G. Av. i. p. 290 (1850).

Phylloscopus nitidus, Jerdon, B. of India, ii. p. 193 (1863).

Hippolais swainsoni, Hodgson, in Gray's Zool. Misc. p. 82. no. 385 (1844).

Bill large, pale underneath.

Upper parts greyish brown, dashed all over with light yellowish green. Wings and tail greyish brown, with the outside edges of each feather broadly margined with light yellowish green. Superciliary streak pale yellow.

Head the same colour as the back.
Underparts, axillaries, and wing-lining *pale lemon-yellow.*
Third and fourth primaries longest. Fifth a shade shorter. Sixth and seventh each considerably shorter than the preceding. Second primary equal to the seventh, sometimes a little longer.
Bastard primary rather small, the exposed part measuring ·5 to ·6.
First wing-bar distinct, upper bar wanting.
Length of wing—male 2·65 to 2·5, female 2·5 to 2·35.
Length of tail—male 2·05 to 1·95, female 1·9 to 1·8.
Legs and claws brown.

So far as is known, this species has a very restricted range, probably breeding in the North-western Himalayas, and wintering in Bengal, Southern India, and Ceylon. Hume met with it in the Punjaub (Stray Feathers, 1873, p. 197), and Mr. R. M. Adam near the Sambhur lake (ibid. p. 382). Blyth says (J. A. S. Beng. 1854, p. 483) that it is generally distributed but rare in Lower Bengal. I have skins obtained on migration by Mr. Brooks at Etawah. Jerdon mentions it as frequent in winter in Southern India, but rare near Calcutta (Birds of Ind. ii. p. 193). Ceylon is one of its favourite winter-quarters (*Legge,* Ibis, 1874, p. 22), and there are several skins of this species from that island in Lord Tweeddale's collection. Strange to say, a solitary bird of this species fell to the gun of Mr. Gaetke's son Ludwig, in Heligoland. Mr. Gaetke's observations seem satisfactorily to prove that birds of the year migrate earlier than their parents. It is scarcely to be wondered at that, on their first journey, they should sometimes stray far out of the usual track. It will doubtless be found that most of the accidental visits of birds to unusual localities are those of birds of the year on their first autumnal migration.

The nest and eggs of this bird are unknown.

4. PHYLLOSCOPUS VIRIDANUS, Blyth.

Phyllopneuste rufa, Blyth, J. A. S. Beng. xi. p. 191 (1842, nec Bodd.).

Phylloscopus viridanus, Blyth, J. A. S. Beng. xii. p. 967 (1843).

Phyllopneuste viridanus, G. R. Gray, App. Cat. B. Nep. p. 152 (1846).

Regulus viridanus, G. R. Gray, Gen. B. i. p. 175 (1848).

Abrornis viridana, Bonap. Consp. p. 290 (1850).

Phyllopneuste affinis, Blyth, Ann. Nat. Hist. xii. p. 98 (1843, nec Tickell).

Abrornis tenuiceps, Hodgson, Gray's Zool. Misc. p. 82 (1844).

Phyllopneuste intermedia, Severtzoff, Faun. of Turkestan, p. 125 (1873)—see Ibis, 1876, p. 81.

Bill large, under mandible pale.
Upper parts greyish brown, dashed all over with yellowish green. Wings and tail greyish brown, with the outside edges of each feather margined with yellowish green. Superciliary streak pale greyish green, extending to the nape.
Head a shade darker colour than the back.
Underparts, including the axillaries, wing-lining, thighs, and under tail-coverts *pale greyish yellow.*
Third, fourth, and fifth primaries longest. Sixth, seventh, and eighth each considerably shorter than the preceding. Second primary generally equal to the seventh; sometimes a shade shorter or a shade longer.
Bastard primary rather small. Exposed part ·5 to ·6.
First wing-bar distinct. Upper bar wanting.
Length of wing—male 2·5 to 2·3, female 2·3 to 2·18.
Length of tail—male 2·0 to 1·95, female 1·9 to 1·8.
Legs and claws lead-colour (pale greenish plumbeous, *Blyth*; brownish grey, *Scully,* in 'Stray Feathers').

This species has a somewhat restricted range, probably breeding at a considerable elevation in the alpine districts of the Himalayas from Cashmere to Darjeeling, and migrating to the plains of North India and Burmah during the cold season. Scully records it north of the Karakorum Pass (Stray Feathers, 1876, p. 148). Brooks (Ibis, 1872, p. 31) found it during the breeding-season in Cashmere; and Jerdon (Birds of I. ii. p. 194) records it from Darjeeling. In von Homeyer's collection is a skin obtained by Meves at Tjubuk, in the Ural, 16th Aug. 1872, which, Mr. Brooks agrees with me, cannot be referred to any other species but this. Blyth

(J. A. S. Beng. xii. p. 967) speaks of it as the commonest species of the genus in the cold season at Calcutta and in Lower Bengal. I have several skins collected in winter at Cawnpore (*Brooks*); and in Lord Tweeddale's collection are skins from Moulmein and Kyouk-kyre in Burmah (*Capt. Beavan*).

The nest and eggs of this species are unknown.

The difference in colour of both the upper and underparts seems to be the only mode of distinguishing this from the preceding species.

5. PHYLLOSCOPUS TENELLIPES, Swinhoe.

Phylloscopus tenellipes, Swinhoe, Ibis, 1860, p. 53.

Bill large, under mandible pale.
Upper parts greyish brown, dashed all over, especially on the rump, with buffish brown. Wings and tail greyish brown, with the outside edge of each feather broadly margined with buffish brown. Superciliary streak buffish white.
Head rather darker than the back.
Underparts white, dashed all over with buff, especially on the breast and flanks. Axillaries and wing-lining pale yellow.
Third, fourth, and fifth primaries longest. Sixth, seventh, and eighth each considerably shorter than the preceding. Second primary about equal to the seventh.
Bastard primary small, the exposed part measuring ·5 to ·53.
First wing-bar distinct, the upper bar less so.
Length of wing—male 2·38, female 2·3.
Length of tail—male 1·86, female 1·83.
Legs and claws pale flesh-colour.

The only skins of this species which I have ever seen or heard of are two in Swinhoe's collection, obtained by himself at Amoy, one on the 12th Oct. 1855, and the other in April 1861, and a female in Lord Tweeddale's collection, marked "Hakodadi, Japan, 5th May, 1865."

The nest and eggs of this bird are unknown.

A smaller bird with pale tarsi, like this species, has been described from the Eastern Himalayas by Blanford (J. A. S. Beng. 1872, pt. 2, p. 162) as *P. pallidipes.* I have not seen this bird; but Mr. Brooks has examined the type in the Calcutta Museum, and assures me that it is a *Horornis.*

6. PHYLLOSCOPUS PLUMBEITARSUS, Swinhoe.

Sylvia (*Phyllopneuste*) *coronata*, Middendorff, Sib. Reise, p. 182 (1851, nec Temm.); Radde, Reisen im Süd. v. Ost-Siber. ii. p. 263 (1863, nec Temm.).

Phyllopneuste (*Phyllobasileus*) *coronatus*, Homeyer, Cab. Journ. f. Orn. 1872, p. 207 (nec Temm.).

Phylloscopus plumbeitarsus, Swinhoe, Ibis, 1861, p. 330.

Phyllopneuste plumbeitarsus, Homeyer, Cab. Journ. f. Orn. 1872, p. 206.

Phylloscopus excoronatus, Homeyer, Cab. Journ. f. Orn. 1872, p. 207.

Phyllopseustes middendorfii, Meves, Öfv. k. Vet. Ak. Förh. 1871, p. 758.

Hypolais graminis, Severtzoff, Faun. of Turkestan, p. 125 (1873); see Ibis, 1876, p. 81.

Phylloscopus viridanus, Dresser, Ibis, 1876, p. 82 (nec Blyth).

Bill large, under mandible pale.
Upper parts greyish brown, dashed all over, especially on the rump, with yellowish green. Wings and tail greyish brown, with the outside edge of each feather broadly margined with yellowish green. Pale greenish white superciliary streak very sharply defined, and extending to the nape.
Head same colour as the back.
Underparts nearly white, slightly dashed with yellow and grey on the breast and flanks. Axillaries, wing-lining, and thighs pale yellow.
Third and fourth primaries longest. Fifth a shade shorter. Sixth, seventh, and eighth each considerably shorter than the preceding. *Second primary intermediate in length between the seventh and eighth.*
Bastard primary rather large, the exposed part measuring ·5 in small females to ·58 to ·65 in males.
First wing-bar distinct. *Upper bar generally equally so.*
Length of wing—male 2·50 to 2·35, female 2·35 to 2·2.
Length of tail—male 2·05 to 1·8, female 1·8.
Legs and claws lead-colour.

This species appears to have a similar range to that of *P. borealis*, but more restricted. In the breeding-season it is found in the subalpine districts of the North-eastern Palæarctic Region from the Ural to the Pacific. Prjevalsky (Mong. and the Tang. Country, vol. ii. p. 35) found it in the breeding-season in the pine-districts of Camsu. It passes through China on migration, and probably winters in Burma and the East-India Islands. Meves (Jour. für Ornith. 1875, p. 429) heard its note near Perm, and shot specimens on the eastern slope of the Ural. Skins obtained by Dr. Dybowski in the subalpine region near Lake Baical are not uncommon in collections; and Middendorff (fide *Meves*) obtained it as far east as Okotsk. Swinhoe found it on the west coast of Hainan in March (Ibis, 1870, p. 345); and in Lord Tweeddale's collection are skins from Kyouk-kyre in British Burmah (*Wardlaw Ramsay*, Jan. 1874), and Moulmein, Burmah (*Capt. Beavan*, Sept. 1865).

The nest and eggs of this bird are unknown.

7. PHYLLOSCOPUS MAGNIROSTRIS, Blyth.

Phylloscopus magnirostris, Blyth, J. A. S. Beng. xii. p. 966 (1843).

Phyllopneuste magnirostris, G. R. Gray, App. Hodgs. Cat. B. Nep. p. 15 (1846).

Phyllopneuste trochilus, Hodgson in Gray's Zool. Misc. p. 82 (1844, nec Linn); J. E. Gray, Cat. Mamm. & B. Nep. Hodgson, p. 65 (1846, nec Linn.).

Phylloscopus javanicus, Blyth, J. A. S. Beng. xiii. p. 393 (1844, nec Horsfield); Blyth, Cat. B. Mus. A. S. Beng. p. 185 (1849, nec Horsfield).

Sylvia javanica, G. R. Gray, Gen. of B. i. p. 174 (1848, nec Horsfield).

Phyllopneuste javanica, Bonap. Consp. Av. p. 290 (1850, nec Horsfield).

Bill large, under mandible pale at base.

Upper parts greyish brown, dashed all over with olive-green. Wings and tail greyish brown, with the outside edge of each feather margined with olive-green. Superciliary streak yellowish white.

Head darker colour than the back.

Underparts pale greyish yellow, greyest on the breast and flanks. Axillaries, wing-lining, and thighs greyish yellow.

Fourth and fifth primaries longest. Third a shade shorter. Sixth a shade shorter than the third. Seventh and eighth each considerably shorter than the preceding. *Second about equal to the eighth.*
Bastard primary large, the exposed part measuring ·6 to ·7.
First wing-bar distinct. Rudiments of upper bar.
Length of wing—male 2·83 to 2·5, female 2·25 to 2·23.
Length of tail—male 2·3 to 2·1, female 2·1 to 1·9.
Legs and claws albescent plumbeous (*Blyth*).

This bird appears to be strictly an Indian species, breeding in Cashmere (*Brooks*, Ibis, 1872, p. 26). Mr. Brooks informs me that it is found in the north-west provinces of India only on migration. In winter it is found sparingly near Calcutta and Lower Bengal, and is generally distributed over Western, Central, and Southern India as far south as Ceylon (*Legge*, Ibis, 1874, p. 73). Blyth says (J. A. S. Beng. 1854, p. 483), that it has been seen on the eastern coast of the Bay of Bengal as far as Chusan; and in Lord Tweeddale's collection is a skin from the S. Andaman Islands (*Wardlaw Ramsay*).

The nest and eggs of this bird are unknown.

8. PHYLLOSCOPUS LUGUBRIS, Blyth.

Phylloscopus lugubris, Blyth, J. A. S. Beng. xii. p. 968 (1843); Blyth, Ann. Nat. Hist. xii. p. 98 (1843); Blyth, J. A. S. Beng. xiv. p. 591 (1845); Blyth, Cat. B. Mus. A. S. Beng. p. 185 (1849); Jerdon, B. of India, ii. p. 192 (1863).

Regulus lugubris, G. R. Gray, Gen. B. i. p. 175 (1848).

Abrornis lugubris, Bonap. Consp. Av. p. 290 (1850).

Abrornis xanthogaster, Hodgson, Gray's Zool. Misc. p. 82 (1844); J. E. Gray, Cat. Mamm. & B. Nep. Hodgson, p. 66 (1846).

Phyllopneuste flaveolus, G. R. Gray, App. Cat. B. Nep. p. 152 (1846).

Regulus flaveolus, G. R. Gray, Gen. B. i. p. 175 (1848).

Abrornis flaveolus, Bonap, Consp. Av. p. 290 (1850).

Bill large, under mandible pale at the base.
Upper parts greyish brown, dashed all over with olive-green. Wings and tail greyish brown, with the outside edge of each feather margined with olive-green. Superciliary streak yellowish white.

Head rather darker colour than the back.

Underparts pale greyish yellow, greyest on the breast and flanks. Axillaries, wing-lining, and thighs greyish yellow.

Fourth and fifth primaries longest. Third and sixth a shade shorter. Seventh considerably shorter. *Second primary considerably shorter than the eighth,* equal to about the tenth.

Bastard primary very large, the exposed part measuring ·7 to ·8.

First bar across the wings distinct. Sometimes rudiments of an upper bar.

Length of wing—male 2·6 to 2·4, female 2·4 to 2·25.

Length of tail—male 2·35 to 2·0, female 2·0 to 1·85.

Legs pale greenish dusky (*Blyth*).

This species is quite eastern in its range, wintering on both coasts of the Bay of Bengal. It probably breeds in the Eastern Himalayas. Mr. Brooks informs me that it is common at Sikkim, but is not found in the north-west provinces. Blyth (J. A. S. Beng. xii. p. 968) says that it is common in Lower Bengal during the cold season, and more or less so over the country generally. In Lord Tweeddale's collection are skins from Assam and Pegu (*Wardlaw Ramsay*). Hume records it from the Tenasserim Provinces (Stray Feathers, ii. p. 478), and Dr. Steere has recently obtained a skin in the Philippines.

The nest and eggs of this bird are unknown.

This bird and the preceding are much darker than the nearly allied species, and are distinguishable from each other by their different wing-formulæ; their notes are said to be unlike; and they vary somewhat in their geographical range; otherwise they seem to be very closely allied.

9. PHYLLOSCOPUS CORONATUS (Temm.).

Ficedula coronata, Temm. & Schl. Fauna Jap. *Aves,* p. 48, t. 18 (1847).

Phyllopneuste coronata, Bp. Consp. Av. i. p. 290 (1850).

Phylloscopus coronatus, Swinhoe, Ibis, 1863, p. 93.

Bill large, under mandible very pale.

Upper parts greyish brown, dashed all over, especially on the rump, with yellowish green. Wings and tail greyish brown, with the outside edge of each feather broadly margined with yellowish green. Superciliary streak extending to the nape.

Head darker colour than the back, with a distinct pale mesial line.

Underparts nearly white, slightly dashed with yellow and grey on the breast and flanks. Axillaries, wing-lining, and thighs pale yellow. *Under tail-coverts pale yellow.*

Third and fourth primaries longest. Fifth a shade shorter. Sixth considerably shorter. *Second a shade shorter than the sixth.* Seventh considerably shorter than the second.

Bastard primary small, the exposed part about ·5 to ·55.

First wing-bar distinct. Second sometimes wanting.

Length of wing—male 2·55 to 2·4, female 2·4 to 2·25.

Length of tail—male 2 to 1·9, female 1·9 to 1·8.

Legs and claws light brown.

This species seems to be the most easterly in its range of any of the genus. It is common in summer in Japan (*Capt. Blakiston,* Ibis, 1862, p. 317; *Whitely,* Ibis, 1867, p. 197). On the continent it has been found near the river Ussuri, lat. 48° (in Mus. von Homeyer). Swinhoe obtained it in North China from Peking (Ibis, 1863, p. 93) probably on migration. He also found it during the spring migration at Amoy (Ibis, 1860, p. 54), and again on the Island of Formosa (Ibis, 1863, p. 307), also probably during migration. In winter this species has been obtained in Java (in Stockholm Mus. fide *Meves*) and at Malacca (*Maingay* in Mus. Lord Tweeddale.

I have been unable to obtain any information respecting the nidification of this bird.

This species is easily distinguishable from any of its near allies by its comparatively long second primary, and by the yellowness of the under tail-coverts compared with the rest of the underparts.

10. PHYLLOSCOPUS OCCIPITALIS (Jerdon).

Phyllopneuste occipitalis, Jerdon, reference unknown.

Phylloscopus occipitalis, Blyth, J. A. S. Beng. xiv. p. 593 (1845).

Reguloides occipitalis, Jerdon, B. of India, ii. p. 196 (1863).

Abrornis occipitalis, Gray, Hand-list B. i. p. 217. no. 3085 (1869).

Bill large, under mandible pale.

Upper parts greyish brown, dashed all over with *light* yellowish green. Wings and tail greyish brown, with the outside edge of each feather broadly margined with light yellowish green. Superciliary streak pale yellow.

Head darker-coloured than the back, *with a distinct pale mesial line.*

Underparts nearly white, dashed all over, especially on the breast and flanks, with yellow and grey. Axillaries and wing-lining pale yellow.

Third, fourth, and fifth primaries longest. Sixth rather shorter. Seventh and eighth each considerably shorter than the preceding. Second primary intermediate in length between the seventh and eighth.

Exposed part of bastard primary measures ·55 to ·7.

First wing-bar rather indistinct. *No upper bar.*

Length of wing—male 2·65 to 2·45, female 2·45 to 2·3.

Length of tail—male 2·15 to 2·0, female 2·0 to 1·9.

Legs and claws light brown.

This species appears to have an extremely limited range, breeding in the North-west Himalayas, crossing the plains of India on migration, and wintering in Southern India.

Brooks found it abundant in Cashmere (Ibis, 1872, p. 29), and says that it also breeds at Rogee and Chenee (Ibis, 1869, p. 457). Its eggs have also been taken at Murree (Stray Feathers, 1873, p. 355). Blyth says that it is found in South India in the cold season (J. A. S. Beng. 1854, p. 483).

Brooks describes the nest of this species as not domed, but placed in a hole under the roots of a large tree on some steep bank-side—a loosely formed structure lined with fine grass, a little wool, and a few hairs. Eggs pure white.

11. PHYLLOSCOPUS TROCHILOIDES (Sundevall).

Phyllopneuste reguloides, Blyth, J. A. S. Beng. xi. p. 191 (1842).

Phylloscopus reguloides, Blyth, J. A. S. Beng. xii. p. 963 (1843).

Acanthiza trochiloides, Sundevall, Ann. Nat. Hist. xviii. p. 252 (1846).

Regulus trochiloides, G. R. Gray, Gen. B. i. p. 175 (1848).

Reguloides trochiloides, Blyth, Cat. B. Mus. A. S. Beng. p. 184 (1849).

Abrornis trochiloides, Bonap. C. G. Av. p. 290 (1850).

Bill large, under mandible pale.
Upper parts greyish brown, dashed all over with yellowish green. Wings and tail greyish brown, with the outside edge of each feather broadly margined with yellowish green. Superciliary streak pale yellow.
Head darker-coloured than the back, *with a distinct pale mesial line.*
Underparts nearly white, dashed all over, especially on the breast and flanks, with yellow and grey. Axillaries and wing-lining pale yellow.
Third, fourth, and fifth primaries longest. Sixth rather shorter. Seventh and eighth each considerably shorter than the preceding. Second primary intermediate in length between the seventh and the eighth.
Exposed part of bastard primary measures ·55 to ·65.
First wing-bar very distinct. Upper bar less distinct.
Length of wing—male 2·6 to 2·45, female 2·45 to 2·25.
Length of tail—male 2·15 to 2·0, female 2·0 to 1·9.
Legs and claws light brown.

This species appears to have a very limited range. It is supposed to breed in the alpine districts of the South-east Himalayas, and to winter on the north and east shores of the Bay of Bengal.

It is common in the breeding-seasn at Rogee and Chenee (Ibis, 1869, p. 458). Capt. Beavan found it at Darjeeling (Ibis, 1868, p. 73). Blyth says that it visits Lower Bengal in some abundance during the cold season (J. A. S. Beng. xxiii. p. 488); and Hume includes it in the list of birds from the Tenasserim provinces (Stray Feathers, ii. p. 478).

The nest and eggs of this bird are unknown.

This species apparently differs from the preceding only in being of a darker colour on the upper parts, with a more or less distinct upper bar across the wing, which is wanting in its near ally.

12. Phylloscopus viridipennis, Blyth.

Phylloscopus viridipennis, Blyth, J. A. S. Beng. xxiv. p. 275 (1856).

Reguloides viridipennis, Jerdon, B. of India, ii. p. 198 (1863).

Bill large, under mandible pale.
Upper parts yellowish olive-green. Wings and tail greyish brown, with the outside edge of each feather broadly margined with yellowish green. Superciliary streak pale yellow.
Head darker-coloured than the back, *with a pale mesial line.*
Underparts yellowish white, greyer on the breast and flanks. Axillaries and wing-lining bright yellow.
Fourth and fifth primaries longest. Third and sixth rather shorter. Seventh, eighth, and ninth each considerably shorter than the preceding. *Second primary about equal to the ninth.*
Exposed part of bastard primary ·5 to ·65.
Two distinct wing-bars.
Length of wing—male 2·4 to 2·25, female 2·25 to 2·1.
Length of tail—male 1·9 to 1·8, female 1·8 to 1·7.
Legs and claws brown.

This species has been supposed to breed in Cashmere and the Western Himalayas, to cross the plains of India on migration, and to winter in Central India. Scully found it common in August about halfway between Leh (Ladak) and Yarkand (Stray Feathers, 1876, p. 149). Mr. Brooks informs me that it is frequent in Cashmere, and that it has been found as far east as Darjeeling. In Lord Tweeddale's collection are skins from the Garo Hills (*Godwin-Austen*); and Hume includes it in his list of birds from the Tenasserim provinces (Stray Feathers, 1874, p. 479).

The eggs and nest of this bird are unknown.

13. PHYLLOSCOPUS PRESBYTIS (Müller).

Sylvia presbytis, Müll. in Leyden Museum, reference unknown.

Phyllopseuste presbytis, G. R. Gray, Hand-list of Birds, i. p. 216. no. 3062 (1869).

Sylvia presbytis, Blyth, Ibis, 1870, p. 169.

Gerygone superciliosa, Wallace, P. Z. S. 1863, p. 491 (nec Gmelin).

Bill rather large, under mandible pale.
Upper parts greyish brown, dashed all over with yellowish

green. Wings and tail greyish brown, with the outside edge of each feather margined with yellowish green. *Inner web of three outer tail-feathers on each side white.*

Head rather darker than the back, with an indistinct pale mesial line.

Underparts, axillaries, and wing-lining greyish yellow, paler on the throat.

Fourth and fifth primaries longest. Sixth and seventh rather shorter. Third primary equal to the seventh. Second primary equal to the eleventh or twelfth.

Bastard primary rather large, the exposed part measuring ·55.

First bar rather indistinct, sometimes altogether abraded. No upper bar.

Length of wing 2·15.

Length of tail 1·7.

Legs and claws lead-colour (*Wallace*).

This species has hitherto only been found on the island of Timor. There are two skins in the British Museum, the types of *Gerygone superciliosa* of Wallace, and a third skin labelled "*Sylvia* (*Phyllopneuste*) *presbytis*, Timor, Wallace." I cannot detect any difference between these birds and those, collected by Müller, in the Leyden Museum.

14. PHYLLOSCOPUS SCHWARZI (Radde).

Sylvia (*Phyllopneuste*) *schwarzi*, Radde, Reisen im Süd. v. Ost-Sibir. ii. p. 260 (1863).

Phylloscopus brooksi, Hume, Stray Feath. ii. p. 505 (1874).

Bill stout, under mandible pale.

Upper parts greyish brown. Wings and tail same colour. Superciliary streak buffish white.

Head same colour as the back.

Underparts buffish white. Axillaries, wing-lining, breast, flanks, and under tail-coverts *buff*.

Fourth and fifth primaries longest. Third and sixth rather shorter. Seventh and eighth each considerably shorter than the preceding. Second primary equal to the *eighth.*

Bastard primary large, the exposed part measuring ·8.

No wing-bar.

Length of wing 2·5 to 2·45.

Length of tail 2·25 to 2·05.

Legs and feet light brown.

But little is known of the geographical distribution of this species. Homeyer and Dresser both possess skins obtained by Dr. Dybowski near Lake Baical; Homeyer has one skin from Tura; and Radde found it at Tarei-nor, in lat. 56°, and in the Bureja mountains, in lat. 58°. In winter it has been obtained near Pahpoon in India (*Davison,* Stray Feathers, 1874, p. 505).

This species is nearest allied to *P. fuscatus,* but differs from that bird in the shape of the bill, which is of about the same length and width at the base, but much stouter and blunter at the point, having a profile quite Finch-like in comparison with the slender Phylloscopine type.

The nest and eggs of this bird are unknown.

15. PHYLLOSCOPUS FUSCATUS, Blyth.

Phylloscopus fuscatus, Blyth, J. A. S. Beng. xi. p. 113 (1842); Jerdon, B. of India, ii. p. 191 (1863).

Phyllopneuste fuscatus, Homeyer, Cab. Jour. f. Orn. 1872, p. 202.

Phylloscopus brunneus, Blyth, J. A. S. Beng. xiv. p. 591 (1845).

Sylvia (*Phyllopneuste*) *siberica,* Middendorff, Sib. Reise, p. 180 (1851); Radde, Reisen im Süd. von Ost-Sibir. ii. p. 260 (1863).

Abrornis armandi, Milne-Edwards, N. Arch. Mus. i. p. 22 (1865).

Oreopneuste davidii, Swinhoe, P. Z. S. 1871, p. 355.

Phyllopneuste maacki, Tristram, Ibis, 1871, p. 110 (nec Schrenck).

Obs. Phyllopneuste maacki (Schrenck) is an *Acrocephalus* or, more probably, a *Hypolais.*

Bill slender, under mandible pale at the base.

Upper parts greyish brown. Wings and tail same colour. Superciliary stripe buffish white.

Head same colour as the back.

Underparts buffish white. Axillaries, wing-lining, breast, flanks, and under tail-coverts *buff.*

Fourth and fifth primaries longest. Third and sixth a shade shorter. Seventh, eighth, and ninth each considerably shorter than the preceding. Second primary equal to the *ninth or tenth.*

Bastard primary large, the exposed part measuring ·7 to ·8.

No wing-bar.
Length of wing—male 2·55 to 2·3, female 2·35 to 2·15.
Length of tail—male 2·4 to 2·2, female 2·2 to 2·0.
Legs and claws brown.

This species is more northerly in its range than many others of the genus. It breeds in the subalpine districts of Lake Baical (skins collected by Dr. Dybowski in this district are common in collections). It passes through S.E. Mongolia (*Prjevalsky,* Mong. and the Tangut Country, ii. p. 36) and North China on migration (*Swinhoe,* Ibis, 1861, p. 330), and is common during the winter months at Amoy (*Swinhoe,* Ibis, 1860, p. 53), Formosa and Japan (*Blyth,* Ibis, 1867, p. 25). Jerdon (Birds of I. ii. p. 191) says that it is not found in South India; but in Lord Tweeddale's collection are skins from Assam (*Godwin-Austen*), Burmah, and Calcutta.

This species is said to lay pure white eggs.

16. PHYLLOSCOPUS UMBROVIRENS (Rüpp.).

Ficedula umbrovirens, Rüpp. Neu. Wirb. p. 112 (1835); idem, Syst. Uebers. no. 148 (1845).

Phyllopneuste umbrovirens, Heugl. Orn. N.O.-Afr. p. 301 (1869).

Phylloscopus umbrovirens, Blanford, Geol. & Zool. of Abyss. p. 378 (1870).

Bill slender, under mandible pale.
Upper parts greyish brown. Wings and tail greyish brown, with the outside edge of each feather broadly margined with bright green. Superciliary stripe buff.
Head same colour as the back.
Underparts *buff,* slightly yellow on the axillaries and wing-lining.
Sixth primary longest. Fourth and fifth a shade shorter. Third rather shorter still. Seventh and eighth each considerably shorter. Second primary equal to the *eleventh or twelfth.*
Bastard primary large, the exposed part measuring ·65 to ·7.
No wing-bar.
Length of wing 2·2.
Length of tail 1·75.
Legs and claws dark brown.

The only two skins of this species which I have seen are from Senafe, Abyssinia. One is in Lord Tweeddale's collection, and the other in the British Museum. They were obtained at an elevation of 7500 feet.

Nothing whatever is known of the migration or nidification of this species.

17. PHYLLOSCOPUS INDICUS (Jerdon).

Sylvia indica, Jerdon, Madras Journ. xi. p. 6 (1840).

Phylloscopus indicus, Jerdon, B. of India, ii. 194 (1863).

Phylloscopus griseolus, Blyth, J. A. S. Beng. xvi. p. 443 (1847).

Ficedula obscura, Severtzoff, Fauna of Turkestan, pp. 65, 124 (1873)—see Ibis, 1876, p. 82.

Bill slender, under mandible pale.
Upper parts greyish brown, without any tinge of green. Wings and tail the same colour. Superciliary streak *greyish yellow,* sharply defined, and extending to the nape.
Head the same colour as the back.
Underparts buffish yellow, darkest on the breast and flanks. Axillaries and wing-lining *buff.*
Third, fourth, fifth, and sixth primaries longest. Seventh, eighth, and ninth each considerably shorter than the preceding. Second equal to the *ninth or tenth.*
Bastard primary large, the exposed part measuring ·75 to ·8.
No wing-bar.
Length of wing—male 2·6 to 2·5, female 2·25.
Length of tail—male 2·05, female 2·0.
Legs and claws albescent plumbeous (*Blyth*).

This is one of the rarer species of the genus, and one having apparently a very restricted range. It probably breeds in the alpine districts of the Himalayas, in the north-east of India, migrating to the north-west provinces in the cooler weather. Brooks (Ibis, 1869, p. 56) says that it is frequently seen at Almorah, and mentions (Ibis, 1872, p. 31) great numbers ascending the hills towards Simla about the end of April. Jerdon (Birds of I. ii. p. 195) says that it winters in Central India.

The nest and eggs of this bird are unknown.

18. Phylloscopus fuliginiventris (Hodgson).

Horornis fuligiventer, Hodgson, P. Z. S. 1845, p. 31; idem, Ann. Nat. Hist. xvi. p. 201 (1847).

Horornis fuligiventris, J. E. Gray, Cat. M. & B. of Nep. Hodgson, p. 64 (1846).

Regulus fuliginoventris, G. R. Gray, Gen. of B. i. p. 175 (1848).

Horornis fuliginiventris, Bp. Consp. G. Av. p. 290 (1850).

Phylloscopus fuliginiventris, Blanford, J. A. S. Beng. 1872, pt. ii. p. 54.

Horornis fuliginiventer, Blyth, Ibis, 1867, p. 21.

Bill slender, under mandible dark.
Upper parts sepia-brown, dashed all over with dirty buff-green. Wings and tail sepia-brown, with the outside edge of each feather broadly margined with dirty buff-green. Superciliary streak dirty buff-yellow.
Head same colour as the back.
Underparts, axillaries, wing-lining, and thighs dirty buff-yellow.
Fourth and fifth primaries longest. Third a shade less. Sixth a shade less than third. Seventh, eighth, and ninth each rather less than the preceding. Second primary equal to about the tenth.
Bastard primary large, the exposed part measuring ·7.
No wing-bar.
Length of wing 2·2 to 2·1.
Length of tail 1·8 to 1·75.
Legs and claws brown.

This species frequents the hills of Nepal and Sikkim. Nothing is known respecting its nidification.

19. Phylloscopus sibilatrix (Bechstein).

Motacilla sibilatrix, Bechst. Naturforscher, xxvii. p. 47 (1793).

Asilus sibilatrix, Bechst. Orn. Taschenb. p. 176 (1802).

Sylvia sibilatrix, Bechst. Naturg. Deutschl. iii. p. 561 (1807).

Ficedula sibilatrix, Koch. Baier. Zool. i. p. 159 (1816).

Curruca sibilatrix, Flem. Brit. Anim. p. 70 (1828).

Phyllopneuste sibilatrix, C. L. Brehm, Vög. Deutschl. p. 425 (1831).

Sylvicola sibilatrix, Eyton, Cat. Brit. B. p. 14 (1836).

Phylloscopus sibilatrix, Newton, in Yarr. Brit. B. ed. 4. i. p. 427 (1873).

Sylvia sylvicola, Mont. Trans. Linn. Soc. iv. p. 35 (1798).

Phyllopneuste sylvicola, C. L. Brehm, Vög. Deutschl. p. 426 (1831).

Trochilus major, Forst. Synopt. Cat. p. 14 (1817).

Phyllopneuste megarhynchos, C. L. Brehm. Vög. Deutschl. p. 525 (1831).

Sylvia sibilans, Blyth, in White's Nat. Hist. Selborne, p. 26, footnote (1858).

Bill slender, under mandible pale.

Upper parts olive-green, dashed all over, especially on the rump, with yellow. Wings and tail greyish brown, with the outside edge of each feather broadly margined with greenish yellow. Tertiaries edged with yellowish white. Primaries dipped with dirty white. Superciliary streak greenish yellow.

Head the same colour as the back.

Underparts white, dashed all over on the throat, and slightly on the breast and flanks, with yellow. Axillaries, wing-lining, and thighs yellow.

Third primary longest. Second sometimes longer, sometimes shorter than the fourth, *always much longer than the fifth.*

Bastard primary *very small,* the exposed part measuring ·3 to ·4.

No wing-bar, but wing-coverts edged, not tipped, with yellowish green.

Length of wing—male 2·8 to 3·1, female 2·9 to 3·0.

Length of tail—male 2·0 to 2·25, female 1·85 to 1·95.

Legs and claws brown.

This species breeds in Central Europe, is very rare in Ireland, common in England, and is found in Scotland as far north as Inverness. It is not found in Norway, but has been seen in Sweden as far north as Stockholm and Upsala. Harvie Brown and Alston found it at Archangel; and it has been met with in the Ural as far north as Bogosloffsk (see Dresser's 'Birds of Europe'). It breeds near Gibraltar (*Irby,* Ibis, 1872, p. 200) and in Sardinia (*Brooke,* Ibis, 1873, p. 243), but passes Malta only on migration (*Wright,* Ibis, 1864, p. 70). It breeds in Transylvania (*Danford* and *Harvie Brown,* Ibis, 1875, p. 308); but in Greece and Asia Minor it is only found on migration, as is also the case in Palestine (*Tristram*, Ibis, 1867, p. 83). It winters in North Africa, having been found to the east as far south as Abyssinia, and to the west as far south as the Gold Coast (*Dresser*, Birds of Europe). The most easterly locality recorded of this bird is Lankoran, on the south-western shore of the Caspian (*Blanford*, Eastern Persia, ii. p. 183).

This species builds a semi-domed nest, lined with dried grass and hair, on or near the ground. The eggs are white, profusely spotted with dark purple.

20. PHYLLOSCOPUS TROCHILUS (Linnæus).

Ficedula asilus, Briss. Orn. iii. p. 479 (1760).

Motacilla trochilus, Linn. Syst. Nat. i. 338 (1766).

Sylvia trochilus, Scop. Ann. I. Hist. Nat. no. 238, p. 160 (1769).

Sylvia trochilus, Boie, Isis, 1822, p. 552.

Phylloscopus trochilus, Boie, Isis, 1826, p. 972.

Regulus trochilus, Flem. Brit. Anim. p. 72 (1828).

Phyllopneuste trochilus, C. L. Brehm, Vög. Deutschl. p. 429 (1831).

Sylvicola trochilus, Eyton, Cat. Brit. B. p. 13 (1836).

Ficedula trochilus, Keys. & Blas. Wirbelth. Eur. p. 56 (1840).

Motacilla fitis, Bechstein, Gem. Nat. Deutschl. iv. p. 678 (1795).

Sylvia fitis, Bechstein, Orn. Taschenb. i. p. 187 (1802).

Ficedula fitis, Koch, Baier. Zool. i. p. 159 (1816).

Phyllopneuste fitis, C. L. Brehm, Vög. Deutschl. p. 427 (1831).

Trochilus medius, Forst. Synopt. Cat. p. 15 (1817).

Phyllopneuste arborea, C. L. Brehm, Vög. Deutschl. p. 427 (1831).

Phylloscopus acredula, C. L. Brehm, Vög. Deutschl. p. 428 (1831).

Sylvia melodia, Blyth, Rennie's Field Nat. i. p. 425 (1833).

Bill slender, under mandible dark.

Upper parts greyish brown, dashed all over with yellowish green, especially on the rump. Wings and tail greyish brown, with the outside edge of each feather margined with yellowish green. Primaries tipped with dirty white. Superciliary streak greenish yellow.

Head the same colour as the back.

Underparts white, dashed all over with yellow. Breast and flanks tinged with buff.

Third primary longest. Fourth a shade shorter. Fifth rather shorter. Sixth considerably shorter than the preceding. Second primary *intermediate in length between the fifth and sixth.*

Bastard primary medium, the exposed part measuring—males average ·6, females average ·5. In rare instances males measure ·63, and as small as ·48. In rare instances females measure ·6, and as small as ·38.

No wing-bar.

Length of wing—male 2·83 to 2·65, females 2·65 to 2·45.

Length of tail—male 2·3 to 2·1, female 2·1 to 1·88.

Legs and claws brown.

This species breeds in Northern and Central Europe, and winters in South-eastern Europe, Asia Minor, Persia, and Africa.

I found it common in Norway up to the North Cape, and in North-east Russia to the mouth of the Petchora. Col. Irby says that it breeds near Gibraltar (Ibis, 1872, p. 200). It breeds in Transylvania (*Danford* and *Harvie Brown*, Ibis, 1875, p. 308); but Dr. Krüper informs me that it is only found in Greece and Asia Minor in winter. Its extreme eastern range appears to be about long. 60° W. Its reported occurrence in India seems in every instance to have been an error; but it occasionally winters in North-central and South-eastern Persia (*Blanford*, Eastern Persia, ii. p. 180). Capt. Shelley says that it winters in Egypt and Nubia (Ibis, 1871, p. 135). Tristram says that it is abundant in the oases of North Africa in winter (Ibis, 1859, p. 418). In the Strickland collection at Cambridge is a skin from Kordofan, in Abyssinia; and in the British Museum are skins from the river Gambia, Damara Land (*Andersson*), Cape-town (*Layard*), and Natal (*Andersson*).

This species builds a semi-domed nest, profusely lined with feathers, on or near the ground, and lays white eggs, spotted with pale red.

In extreme summer plumage in high latitudes every trace of yellow and green disappears, except a faint dash on the axillaries, wing-lining, and thighs; but birds in this plumage are very rare, and all the specimens of it I have seen were obtained within the arctic circle. In autumn birds of the year have the whole underparts deep buffish yellow.

21. PHYLLOSCOPUS GAETKEI, sp. nov.

Phyllopneuste major, Tristram, Ann. Nat. Hist. p. 29 (1871, nec Forster).

Bill slender, under mandible darkish.
Upper parts greyish brown. Wings and tail greyish brown. Superciliary streak dirty white.
Head the same colour as the back.
Underparts white, slightly tinged with buffish yellow on the breast and flanks.
Third or fourth primary longest and nearly equal. Fifth rather shorter. Sixth considerably shorter than the preceding. *Second primary intermediate in length between the sixth and seventh.*
Bastard primary medium, the exposed part measuring—male ·5, female ·4.
No wing-bar.
Length of wing—male 2·53, female 2·5.
Length of tail—male 2·1, female 2·05.
Legs and claws brown.

In the 'Annals of Nat. Hist.' for July 1871, Tristram describes a *Phylloscopus* from the south Mediterranean coast under the name of *Phyllopneuste major.* It is nearest allied to *P. trochilus,* but differs from that species in having a shorter second primary, which is intermediate in length between the sixth and seventh, instead of between the fifth and sixth. This seems a very slight difference upon which to establish a species. In the very nearly allied *P. collybita* the second primary seems to be indifferently intermediate between the sixth and seventh or the seventh and eighth. Tristram appears to have felt the injustice of dividing one species on this ground without serving the other in the same way. In order to be impartial he accordingly splits *P. collybita* (then generally called *rufus*) into *P. rufus* and *P. brevirostris.* I have repeatedly shot both forms of *P. collybita,* and have no doubt of their identity, being unable to detect any difference in their notes or habits. With *P. trochilus,* however, the case is different. So far as my experience goes (and I have examined some hundreds of skins), the second primary in this species is constantly intermediate between the fifth and sixth. When I was in the valley of the Petchora in 1875, just before we entered the delta of that great river, I heard the note of a small Warbler resembling the sound *tzzzk,* not unlike the spitting of a cat. Feeling perfectly convinced that it proceeded from a bird with which I was unacquainted, I chased it on the banks of the Petchora, heard it repeatedly utter its extraordinary note, and finally shot it. It turned out to be a female of a species nearly allied to *P. trochilus,* but with the second primary intermediate in length between the sixth and seventh. The bastard primary was much smaller than usual; and in the general colour of the plumage there was an absence of the usual yellow tinge both above and below, as is exceptionally the case with *P. trochilus* in extreme summer plumage in high latitudes. Not liking to make a new species on somewhat slender grounds from a single example, I did not describe it (Ibis, 1876, p. 216). Turning up Tristram's description of *P. major,* I concluded my bird to belong to it, and to be a somewhat doubtful species, until I visited Heligoland last autumn. Gaetke then pointed out to me in the collection of birds in his studio a "Laubvogel" much greyer on the back and whiter underneath than *P. trochilus.* He told me that he had been at some trouble to shoot it in his garden, *because its note was so different from* that of *P. trochilus.* It turned out to be a male. The length of wing and of bastard primary agree with those of *P. trochilus* female, but are smaller than the usual size of *P. trochilus* male. The second primary is intermediate in length between the sixth and seventh. A second example having thus come under my notice, I am inclined to think that *Phylloscopus major* of Tristram may turn out to be a good species after all; but since the name *major* cannot stand (there being already a *Trochilus major* of Forster, 1817, among the synonyms of *P. sibilatrix*), I propose to call it *Phylloscopus gaetkei*, hoping that future researches may establish its right to be considered a good species upon a firmer basis.

22. PHYLLOSCOPUS BONELLII (Vieillot).

Sylvia bonelli, Vieill. Nouv. Dict. xxviii. p. 91 (1819).

Phyllopneuste bonelli, Bp. Comp. List, p. 13 (1838).

Ficedula bonelli, Keys. & Blas. Wirbelth. Eur. p. 185 (1840).

Sylvia nattereri, Temm. Man. d'Orn. i. p. 227 (1820); Boie, Isis, 1822, p. 553.

Curruca platystoma, Ehr. Symb. Phys. fol. cc (1829).

Phyllopneuste montana, C. L. Brehm, Vög. Deutschl. p. 429 (1831).

Sylvia prasinopyga, Gloger, Handb. Vög. Eur. i. p. 217 (1834).

Sylvia albicans, Gloger, *tom. cit.* p. 217 (1834).

Phyllopneuste alpestris, C. L. Brehm, Vogelfang, p. 232 (1855).

Phyllopneuste orientalis, C. L. Brehm, *op. cit.* p. 232 (1855).

Bill slender, under mandible pale.

Upper parts olive-green, dashed all over with pale buffish yellow, *on the rump with sulphur-yellow.* Wings and tail greyish brown, with the outside edge of each feather broadly margined with greenish yellow. Tertiaries edged with yellowish white. Primaries tipped with dirty white. Superciliary streak buffish yellow.

Head the same colour as the back.

Underparts white, slightly dashed with pale buff-yellow on the throat, and with yellow on the breast and flanks. Axillaries, wing-lining, and thighs yellow.

Third and fourth primary longest. Fifth rather shorter. Sixth considerably shorter than fifth. Second primary *between the fifth and seventh.*

Bastard primary medium, the exposed part measuring ·5 to ·6.

No wing-bar, but wing-coverts edged, not tipped, with yellowish green.

Length of wing—male 2·75 to 2·55, female 2·5 to 2·3.

Length of tail—male 2·2 to 2·05, female 2·0 to 1·8.

Legs and feet light brown.

This species does not range further north in Europe than into Northern France, but breeds throughout Southern Europe, wintering in Africa, where it is found as far south as Nubia and Senegal (*Dresser,* Birds of Europe). I have seen it during the breeding-season in Greece and Asia Minor. Tristram found it in summer in the Jordan valley (Ibis, 1867, p. 83). Capt. Shelley found it in summer in Egypt and Nubia (Ibis, 1871, p. 135). It passes Malta on migration (*Wright,* Ibis, 1864, p. 70). Tristram says that it is abundant in the oases of North Africa in winter (Ibis, 1859, p. 418). Col. Irby says that it breeds near Gibraltar (Ibis, 1872, p. 300); and accidental visitors are obtained in autumn on Heligoland (Ibis, 1875, p. 179).

This species builds a semi-domed nest on the ground, lined with fine grass. The eggs are white, profusely spotted with dark purple.

23. PHYLLOSCOPUS COLLYBITA (Vieillot).

Sylvia rufa, Bechstein, Orn. Taschenb. i. p. 188 (1802, nec Bodd.).

Ficedula rufa, Koch, Baier. Zool. i. p. 160 (1816, nec Bodd.).

Phyllopneuste rufa, C. L. Brehm, Vög. Deutschl. p. 433 (1831, nec Bodd.).

Trochilus rufa, Rennie, Field Nat. i. p. 52 (1833, nec Bodd.).

Sylvicola rufa, Eyton, Cat. Brit. B. p. 14 (1836, nec Bodd.).

Sylvia collybita, Vieill. Nouv. Dict. xi. p. 235 (1817).

Phylloscopus collybita, Newton, in Yarr. Brit. B. ed. 4, i. p. 437 (1873).

Trochilus minor, Forst. Synopt. Cat. p. 14 (1817).

Sylvia abietina, Nilss. K. Vet. Ak. Handl. 1819, p. 115.

Regulus hippolais, Flem. Brit. Anim. p. 72 (1828).

Sylvia hippolais, Gould, B. of Eur. pl. 131, fig. 2 (1837).

Phyllopneuste sylvestris, C. L. Brehm, Vög. Deutschl. p. 431 (1831).

Phyllopneuste solitaria, C. L. Brehm, Vög. Deutschl. p. 432 (1831).

Phyllopneuste pinetorum, C. L. Brehm, Vög. Deutschl. p. 432 (1831).

Sylvia loquax, Herbert, White's Hist. of Selb. p. 55, note (1833).

Sylvia brevirostris, Strickland, P. Z. S. 1836, p. 98.

Phylloscopus habessinicus, Blanford, Ann. Nat. Hist. iv. ser. 4, p. 329 (1869).

Phylloscopus abyssinicus, Blanford, Geol. & Zool. Abyss. p. 378 (1870).

Phylloscopus brehmi, Homeyer, Erinn. a. d. Samml. Deutschl. Ornith. 1870, p. 48.

Bill slender, dark underneath.

Upper parts greyish brown, dashed all over with yellowish green. Wings and tail greyish brown, with the outside edge of each feather broadly margined with yellowish green. Superciliary streak yellowish green.

Head the same colour as the back.

Underparts white, dashed all over with yellow, which is somewhat buff on the breast and flanks. Axillaries, wing-lining, and thighs yellow.

Third and fourth primaries longest. Fifth rather shorter. Sixth rather shorter. Seventh considerably shorter, and eighth rather shorter than the preceding. Second primary *considerably shorter than the sixth,* frequently shorter than the seventh, and occasionally shorter than the eighth.

Bastard primary medium, ·5 to ·65.

No wing-bar.

Length of wing—male 2·55 to 2·25, female 2·3 to 1·95.

Length of tail—male 2·2 to 2·0, female 2·0 to 1·7.

Legs dark brown.

This species has a somewhat similar range to that of *P. trochilus,* but does not go so far north in summer, nor so far south in winter. It breeds in Central Europe, and winters on both shores of the Mediterranean, and has been found as far south as Abyssinia.

I found it common in Norway as far north as Trondhjem; and Collett told me he had once found it as far north as 65°. Col. Irby says it winters near Gibraltar, where a few remain to breed (Orn. Straits Gib. p. 90). It winters in Andalucia (*Howard Saunders,* Ibis, 1871, p. 213), Sardinia (*Brooke,* Ibis, 1873, p. 243), Pisa (*Giglioli,* Ibis, 1865, p. 53), Malta (*Wright,* Ibis, 1874, p. 69), and occasionally in Corfu and Epirus (*Powys,* Ibis, 1860, p. 231). Dr. Krüper informs me that it winters in Greece and Asia Minor. Robson told me it only occurs in winter near Constantinople; but Danford and Harvie Brown found it common in summer in Transylvania (Ibis, 1875, p. 308). It winters in the Canaries and Teneriffe (*Godman,* Ibis, 1872, p. 174), in the oases of North Africa (*Tristram,* Ibis, 1859, p. 418), in Egypt and Nubia (*Capt. Shelley,* Ibis, 1871, p. 135), in the valley of the Jordan (*Tristram,* Ibis, 1867, p. 83); and Blanford found it in Abyssinia (*P. abyssinicus,* loc. cit.) and Persia (Eastern Persia, ii. pp. 181, 182).

This species builds a semi-domed nest, profusely lined with feathers, on or near the ground, and lays a white egg, sparingly spotted with dark red.

The Chiffchaff varies considerably in size; the smaller birds are chiefly found in South Europe, and the largest in Scandinavia. The smaller birds have been considered a separate species (*P. brehmi*); but I have had no difficulty in finding a complete series of both sexes. I met with the supposed smaller species at Valkenswaard, in Holland, and could not detect the least difference in its various notes and calls from those of the larger race. I have carefully examined the types of *P. brehmi* in the collection of Von Homeyer, of *P. brevirostris* in the Strickland collection in Cambridge, and of *P. abyssinicus* in the British Museum, and have not the slightest hesitation in pronouncing all three to be absolutely identical with *P. collybita.*

24. PHYLLOSCOPUS TRISTIS, Blyth.

Sylvia trochilus, Jerd. Madr. Journ. xi. p. 6 (1840, nec Linn.).

Phylloscopus tristis, Blyth, J. A. S. Beng. xii. p. 966 (1843).

Regulus tristis, G. R. Gray, Gen. of B. i. p. 175 (1848).

Abrornis tristis, Bonap. Consp. Gen. Av. i. p. 290 (1850).

Phyllopneuste tristis, Gould, Birds of Asia, pt. xvii. (1865).

Phyllopseustes tristis, Cab. Journ. f. Orn. 1875, p. 429.

Ficedula fulvescens, Severtzoff, Fauna of Turkestan, pp. 65, 126 [see Ibis, 1876, p. 82] (1873).

Phylloscopus brevirostris, Brooks, Ibis, 1869, p. 236 (nec Strickland).

Phylloscopus neglectus, Seebohm & Harvie Brown, Ibis, 1876, p. 218 (nec Hume).

Phylloscopus brehmi, Blanford, Eastern Persia, ii. p. 182 (1876, nec Homeyer).

Bill very slender, under mandible nearly black.

Upper parts earthy brown, *slightly* tinged with yellowish green on the rump. Wings and tail greyish brown, *slightly* tinged with green on the outside edge of each feather. Superciliary streak buffish white.

Head exactly the same colour as the back.

Underparts nearly white, slightly dashed with *buffish grey* on the breast, flanks, and under tail-coverts; in autumn plumage conspicuously so. Axillaries, wing-lining, and thighs pale yellow, which almost disappears in extreme summer plumage.

Third and fourth primaries longest. Fifth a shade shorter. Sixth considerably shorter. Seventh and eighth each considerably shorter than the previous one. *Second generally between the seventh and eighth*, sometimes equal to the seventh, sometimes to the eighth.

Bastard primary rather large, the exposed part measuring ·5 in the female, and ·53 to ·65 in the males.

No wing-bar.

Length of wing—male 2·58 to 2·33, female 2·25 to 2·1.

Length of tail—male 2·3 to 2·0, female 1·9.

Legs and claws black.

This species winters in the plains of India and Baluchistan. A few remain to breed in the alpine districts of the Himalayas and the Karakorum mountains, whilst the main body passes through Turkestan on migration to their summer quarters in Siberia, which probably extend from the valley of the Petchora to Lake Baical.

Harvie Brown and I found it breeding north of the arctic circle on the banks of the Petchora (Ibis, 1876, p. 217); Meves obtained it in the breeding-season at Perm (Journ. für Ornith. 1875, p. 430); Severtzoff writes that it passes on migration through the Central and Lower Ural, the Kirghis steppes, and Turkestan (*Dresser*, Ibis, 1876, p. 82), and skins from Lake Baical are not uncommon in collections. Hume (Stray Feathers, 1876, p. 148) says that immature birds have been found in the Karakash valley, and that it is probably found on both sides of the Karakorum mountains; and Blanford says that it is common throughout Baluchistan (Eastern Persia, ii. p. 180). In Lord Tweeddale's collection are skins from Lahore and Umballah (*Capt. Beavan*); I have skins from Etawah (*Brooks*); and Blyth (J. A. S. Beng. 1854, p. 483) represents this species as common and generally diffused throughout North India during the cold season.

This species breeds on the ground, makes a semi-domed nest, profusely lined with feathers, and lays white eggs spotted with dark red.

This species is most likely to be confused with *P. collybita, P. fuscatus*, and *P. neglectus*. *P. collybita* in all stages of plumage is much greener above and much yellower underneath, and has dark brown instead of black legs. *P. fuscatus* may easily be distinguished by the paler colour of its under mandible and legs, and by its pale chestnut axillaries and wing-lining. It has also a longer bastard primary, and a shorter second primary. *P. neglectus* is a smaller bird, without any trace of yellow on the axillaries and wing-lining, and has the upper part of a more sandy brown.

25. PHYLLOSCOPUS NEGLECTUS (Hume).

Phyllopneuste neglectus, Hume, Stray Feathers, i. p. 195 (1873).

Phylloscopus neglectus, Blanford, Eastern Persia, ii. p. 182 (1876).

Bill slender, under mandible black.

Upper parts *ashy grey*, with a slight tinge of green on the rump. Wings and tail-feathers greyish brown, with the outside edge of each feather broadly margined with *ashy grey*. Superciliary streak ashy white.

Head same colour as the back.

Underparts ashy white, darkest on the breast and flanks. Axillaries, wing-lining, and thighs *ashy white*.

Third, fourth, and fifth primaries longest. Sixth a shade shorter. Seventh, eighth, and ninth each considerably

shorter than the preceding. Second primary equal to the ninth.
Bastard primary rather large, the exposed part measuring ·6.
No wing-bar.
Length of wing—male 2·05, female 1·95.
Length of tail—male 1·7, female 1·6.
Legs and feet black.

This species has hitherto only been found in the cold season in Scinde (*Hume,* Stray Feathers, *loc. cit.*) and Baluchistan (*Blanford,* Eastern Persia, ii. p. 182). Its breeding-places are unknown. Mr. Brooks has convinced me that the specimen which I shot in the Petchora (Ibis, 1876, p. 218) is most probably a very small *P. tristis* in the extreme summer-plumage of a higher latitude, when nearly all trace of yellow disappears from the plumage, as is occasionally the case with *P. trochilus.* The true *P. neglectus* is a still smaller bird, the large males being as small or even smaller than the small females of *P. tristis.* Mr. Brooks tells me also that *P. neglectus* frequents dry sandy localities instead of swampy ground.

26. PHYLLOSCOPUS AFFINIS (Tickell).

Motacilla affinis, Tickell, J. A. S. Beng. ii. p. 576 (1833).

Motacilla affinis, Blyth, J. A. S. Beng. xvi. p. 442 (1847).

Phylloscopus affinis, Blyth, Cat. B. M. As. Soc. p. 185 (1849).

Phylloscopus affinis, Jerdon, B. of India, ii. p. 194 (1863).

Abrornis affinis, Moore, P. Z. S. 1854, p. 106.

Abrornis xanthogaster, Hodgson in Gray's Zool. Misc. p. 82. no. 854 (1844).

Regulus flaveolus, G. R. Gray, Gen. of B. i. p. 175 (1848).

Abrornis flaveolus, Bp. Consp. G. Av. p. 290 (1850).

Bill slender, under mandible pale.
Upper parts dark olive-brown. Wings and tail greyish brown. Superciliary streak greyish yellow.
Head rather darker than the back.
Underparts, axillaries, and wing-lining *greyish yellow,* buffer on the breast and flanks.
Third, fourth, fifth, and sixth primaries longest. Seventh, eighth, and ninth each considerably shorter than the preceding. Second primary about equal to the tenth.

Bastard primary very large, the exposed part measuring ·65 to ·75.
Length of wing—male 2·4 to 2·2, female 2·2 to 2·0.
Length of tail—male 2·15 to 2·0, female 1·95 to 1·8.
Legs and claws brown.

This species breeds on both sides of the Himalayas, having been found in summer in Cashmere (*Brooks,* Ibis, 1872, p. 31) and in Thibet (*v. Pelzeln,* Ibis, 1868, p. 308). Jerdon (Birds of Ind. ii. p. 194) says that it is not uncommon in winter at Calcutta and all over India; and in Lord Tweeddale's collection are skins from Burma (Munipur, *Godwin-Austen*).

The nest and eggs are unknown.

27. PHYLLOSCOPUS TYTLERI, Brooks.

Phylloscopus tytleri, Brooks, Ibis, 1872, p. 23; Hume, Stray Feathers, iii. p. 279 (1875).

Bill very long and slender, under mandible dark.
Upper parts greyish brown, dashed all over with olive-green. Wings and tail greyish brown, with the outside edge of each feather margined with olive-green. Superciliary streak not very conspicuous.
Head the same colour as the back.
Underparts nearly white, slightly dashed with yellow and grey, especially on the flanks. Axillaries, wing-lining, and thighs yellow.
Third, fourth, and fifth primaries longest. Sixth, seventh, and eighth each considerably less than the preceding. *Second primary between the eighth and ninth.*
Bastard primary rather large, the exposed part measuring ·55 to ·68.
No wing-bar.
Length of wing—male 2·43 to 2·35, female 2·3 to 2·2.
Length of tail—male 1·85 to 1·7, female 1·7 to 1·65.
Legs and claws brown.

This is one of the rarest and least-known species of the genus. It breeds in Cashmere (*Brooks,* Ibis, 1872, p. 22). Mr. Brooks informs me that he has shot birds on migration in spring at Etawah and Almorah. It probably winters in the plains of North India.

This species breeds in pine trees, and makes a cup-shaped nest, profusely lined with feathers, near the end of a branch, at a considerable elevation from the ground. The eggs are pure white.

28. Phylloscopus superciliosus (Gmelin).

Motacilla superciliosa, Gm. Syst. Nat. i. p. 975 (1788, ex Lath.).

Sylvia superciliosa, Lath. Ind. Orn. ii. p. 526 (1790).

Phyllobasileus superciliosus, Cabanis, Journ. f. Orn. 1853, p. 81.

Reguloides superciliosus, Swinhoe, Ibis, 1863, p. 307, et subseq.

Phylloscopus superciliosus, Newton in Yarr. Brit. B. ed. 4, i. p. 443 (1873).

Regulus modestus, Hancock, Ann. Nat. Hist. ii. p. 310 (1839, nec Gould); Yarrell, Brit. Birds, i. p. 316 (1843, nec Gould).

Phylloscopus modestus, Blyth, J. A. S. Beng. xii. p. 963 (1843, nec Gould).

Phyllopneuste modestus, Blyth, Ann. Nat. Hist. xii. p. 98 (1843, nec Gould).

Reguloides modestus, Blyth, J. A. S. Beng. xvi. p. 442 (1847, nec Gould).

Regulus modestus, Cabanis, Naumannia, ii. pt. 1, p. 5 (1852, nec Gould).

Regulus modestus, Gaetke, Journ. f. Orn. i. p. 91 (1853, nec Gould).

Regulus modestus, Tristram, Ibis, vi. p. 230 (1864, nec Gould).

Regulus inornatus, Blyth, J. A. S. Beng. xi. p. 191 (1842).

Phyllopneuste reguloides, Hodgson, Gray's Zool. Miscl. p. 82 (1844).

Phyllopneuste reguloides, Hodgson, J. A. S. Beng. xxiv. p. 575 (1855).

Sylvia (*Phyllopneuste*) *proregulus,* Middendorff, Sib. Reise, p. 183 (1853, partim, nec Pallas).

Ficedula proregulus, Schlegel, Vog. van Nederl. pp. 130, 241 (1854–1858, nec Pallas).

Reguloides proregulus, Horsf. & Moore, Cat. E. I. C. Mus. i. p. 342 (1854, nec Pallas).

Phyllopneuste proregulus, Blasius, Naumannia, viii. p. 311 (1858, nec Pallas).

Reguloides proregulus, Swinhoe, Ibis, 1863, p. 307, et ante (nec Pallas).

Reguloides proregulus, Jerdon, B. of India, ii. p. 197 (1863, nec Pallas).

Sylvia bifasciata, Gaetke, Naumannia, viii. p. 419 (1858).

Bill *very slender,* under mandible dark brown.

Upper parts greyish brown, dashed all over, especially on the rump, with yellowish green. Wings and tail greyish brown, with the outside edge of each feather broadly margined with yellowish green. *Outside edge of tertiaries* pale yellow. Primaries, from about the seventh to the sixteenth, *tipped with dirty white.* Superciliary streak pale yellow, some of the feathers immediately above and below dashed with black (showing an approach to *Regulus*).

Head rather darker than the back, with an indistinct mesial line.

Underparts yellowish white, greyer on the breast and flanks. Axillaries, wing-lining, and thighs pale yellow.

Third, fourth, and fifth primaries longest. Sixth rather shorter. Seventh and eighth each considerably shorter than the preceding. Second primary about equal to the seventh, generally a shade longer, sometimes a shade shorter.

Bastard primary medium, the exposed part measuring ·5 to ·55.

Both wing-bars very distinct.

Length of wing—male 2·35 to 2·15, female 2·15 to 2·0.

Length of tail—male 1·85 to 1·7, female 1·7 to 1·55.

Legs and claws brown.

This small and apparently delicate bird has a wider range than almost any other species of the genus. It breeds in the alpine districts of Southern Siberia, in Turkestan, and Cashmere. Its extreme northern range extends from the British Islands to the Pacific. In Europe it is doubtless only a straggler on migration. It also passes through North China and North India on migration, and winters in Central India, South China, Pegu, and the Tenasserim provinces.

Skins obtained by Dr. Dybowski near Lake Baical are common in collections. Severtzoff found it in Turkestan (Ibis, 1876, p. 81). Brooks found it breeding in Cashmere (Ibis, 1872, p. 26). Gaetke obtains it regularly in autumn in Heligoland (Ibis, 1875, p. 180). Its other various occurrences in Europe are duly chronicled in Dresser's 'Birds of Europe.' Middendorff obtained it at Okhotsk (Sib. Reise, vol. ii. pt. 2, p. 183). Swinhoe found it in spring at Chefoo, North China (Ibis, 1874, p. 441), and in autumn near Peking (Ibis, 1861, p. 330), on both occasions doubtless on migration. He also found it in winter at Amoy (Ibis, 1860, p. 54) and in Hainan (Ibis, 1870, p. 345). Brooks records it from Almorah on migration (Ibis, 1869, p. 354). Jerdon (Birds of Ind. ii. p. 197) says that it is common in most parts of India in the cold season. Blyth says that it is common in the cold season near Calcutta. Hume includes it in his list of the birds of Upper Pegu (Stray Feathers, 1875, p. 140) and of the Tenasserim provinces (Stray Feathers, 1874, p. 478); and in Lord Tweeddale's collection are skins from the Garo Hills (*Godwin-Austen*), Munipur (*Godwin-Austen*), and Rangoon (*Wardlaw Ramsay*).

Mr. Brooks describes the nest of this species as being semidomed, lined with fine grass and a few hairs, placed on the ground on a sloping bank. The eggs are white, more or less spotted with red or purple.

29. PHYLLOSCOPUS PROREGULUS (Pallas).

Motacilla proregulus, Pallas, Zoogr. Rosso-As. i. p. 499 (1831).

Reguloides proregulus, Swinhoe, Ibis, 1863, p. 307, et subseq.

Phyllopneuste (*Phyllobasileus*) *proregulus*, Homeyer, Journ. f. Orn. 1872, p. 208.

Regulus modestus, Gould, B. of Eur. p. 149 (1837).

Phylloscopus modestus, Blyth, J. A. S. Beng. xii. p. 693 (1843).

Phyllopneuste modestus, Blyth, Ann. & Mag. Nat. Hist. xii. p. 98 (1843).

Reguloides modestus, Blyth, Cat. B. Mus. As. Soc. p. 184 (1849).

Abrornis chloronopus, Hodgson in Gray's Zool. Miscl. p. 82 (1843).

Reguloides chloronotus, Jerdon, B. of India, ii. p. 197 (1863).

Bill very slender, dark underneath.
Upper parts olive-green. *Rump yellow.* Wings and tail greyish brown, with the outside edge of each feather broadly margined with yellowish green. Outside edge of tertiaries yellow. Superciliary streak yellow.
Head darker colour than the back, with a distinct pale mesial line.
Underparts, axillaries, and wing-lining greyish yellow.
Fourth and fifth primaries longest. Third and sixth rather shorter. Seventh and eighth each considerably shorter than the preceding. Second equal to about the tenth.
Bastard primary rather large, the exposed part measuring ·55 to ·6.
First bar yellow and very distinct. Upper bar yellow, but not so distinct.
Length of wing—male 2·05 to 1·95, female 1·9 to 1·8.
Length of tail—male 1·65 to 1·55, female 1·5 to 1·45.
Legs and claws light brown.

This species has a somewhat extended but eastern range. It breeds in the subalpine districts of Southern Siberia, and throughout the alpine districts of the Himalayas, from Cashmere to Burma. It passes through North China on migration, and winters in South China, Burma, and Bengal.

Dr. Dybowski has obtained it near Lake Baical (*Dresser,* Birds of Europe, art. *P. superciliosus,* p. 4). It breeds in Cashmere (*Brooks,* Ibis, 1872, p. 26). I have skins obtained by Mr. Brooks at Sikkim; and in Lord Tweeddale's collection are skins from Darjeeling. Swinhoe obtained it in February at Hainan (Ibis, 1870, p. 345); and in his collection are skins from Amoy obtained in December. Hume obtained it from the pine-forests north of Pahpoon, in the Tenasserim provinces (Stray Feathers, 1874, p. 479); and it has been found beyond the south-west frontier of Bengal (*Ball,* Stray Feathers, 1874, p. 415). Mr. Brooks informs me that it is never seen in the plains of India. One specimen of this bird has been shot, and at least another seen, on Heligoland.

This species makes a semi-domed nest, lined with feathers and bits of thin birch-bark. It is placed on the bough of a pine tree, often a considerable height from the ground. The eggs are white, richly spotted with dark brownish red.

30. PHYLLOSCOPUS EROCHROUS (Hodgson).

Abrornis erochroa, Hodgson, Gray's Zool. Misc. p. 82 (1844).

Regulus erochroa, G. R. Gray, Gen. B. i. p. 175 (1848).

Reguloides erochroa, Jerdon, B. of India, ii. p. 199 (1863).

Abrornis pulchrala, Hodgson, Gray's Zool. Misc. p. 82 (1844).

Reguloides —— ? Blanford, J. A. S. Beng. xli. pt. ii. p. 162 (1872).

Bill very slender, under mandible dark.

Upper parts olive-green. *Rump yellow.* Wings and tail greyish brown, with the outside edge of each feather broadly margined with olive-green. Outside edge of the tertiaries yellowish white at the tip. *Inner web of three outer tail-feathers on each side white.* Superciliary streak greyish yellow.

Head rather darker-coloured than the back, with an indistinct pale mesial line.

Underparts, axillaries, and wing-lining greyish yellow.

Fourth, fifth, and sixth primaries longest. Third and seventh rather shorter. Eighth and ninth each considerably shorter than the preceding. Second equal to about the tenth.

Bastard primary large, the exposed part measuring ·55 to ·65.

First bar orange and very distinct. Upper bar greyish orange and rather indistinct.

Length of wing—male 2·45 to 2·3, female 2·25 to 2·1.

Length of tail—male 2·0 to 1·8, female 1·75 to 1·6.

Legs and claws brown.

So far as is known, this species has a more limited range than almost any other of the genus. Hodgson found it in Nepaul (in British Museum); and I have skins from Sikkim; but Mr. Brooks tells me it is never seen in the plains of India. Nothing is known of its nidification.

31. PHYLLOSCOPUS SUBVIRIDIS (Brooks).

Reguloides subviridis, Brooks, P. A. S. Beng. 1872, p. 148.

Bill very slender, under mandible pale at the base.

Upper parts greyish brown, dashed all over, especially on the rump, with dirty yellowish green. Wings and tail greyish brown, with the outside edge of each feather broadly margined with dirty yellowish green. Outside edge of tertiaries dirty white. Superciliary streak dirty white.

Head rather darker than the back, with an indistinct mesial line.

Underparts dirty yellowish white, dashed with buff on the breast and flanks. Axillaries, wing-lining, and thighs dirty yellowish white.

Third, fourth, and fifth primaries longest. Sixth rather shorter. Seventh and eighth each considerably shorter than the preceding. Second primary *about equal to the ninth.*

Exposed portion of bastard primary ·48 to ·6.

First wing-bar very distinct. Rudiments of upper bar.

Length of wing—male 2·25 to 2·13, female 2·1 to 2·05.

Length of tail—male 1·8 to 1·7, female 1·7 to 1·65.

Legs and feet dark brown.

Mr. Brooks informs me that he obtained this species in the north-west provinces of India as far east as Cawnpore during the cold season. Its summer quarters are unknown.

It is a somewhat smaller bird than *P. superciliosus*, with a shorter second primary, and with the white tips to the primaries and the upper bar on the wing very indistinct.

32. PHYLLOSCOPUS MACULIPENNIS (Blyth).

Abrornis maculipennis, Blyth, Ibis, 1867, p. 27.

Reguloides —— ? Blanford, J. A. S. Beng. xli. pt. 2, p. 163 (1872).

Abrornis chloronotus, Hume, Nests and Eggs of Ind. B. p. 372 (1874, nec Hodgson).

Bill very slender, under mandible black.

Back olive-green. *Rump yellow.* Wings and tail greyish brown, with the outside edge of each feather broadly margined with yellowish green. Outside edge of tertiaries tipped with white, *inner web of three outside tail-feathers white.* Superciliary streak white.

Head grey, with a distinct white mesial line.

Throat greyish white; rest of underparts, axillaries, and wing-lining yellow.

Fourth, fifth, and sixth primaries longest. Third and seventh

rather shorter. Eighth and ninth each considerably shorter than the preceding. Second equal to about the tenth.
Bastard primary proportionately large, the exposed part measuring ·5.
Two very distinct yellow bars across the wing.
Length of wing 2·0 to 1·8.
Length of tail 1·6 to 1·35.
Legs and claws brown.

Very little is known of the geographical distribution of this small but beautifully coloured bird. The only skins I have seen are from Sikkim or the neighbourhood. Nothing is known of its nidification or migration.

VII.—*A Note on the Genus* Orthotomus. By R. Bowdler Sharpe, M.A., F.L.S., F.Z.S., &c.

(Plate II.)

The two beautiful new species of Tailorbird described and figured in the present paper were obtained by my excellent friend Dr. J. B. Steere during his recent expedition to the Philippine Islands; and it seems a fitting occasion to give a short review of the geographical distribution of the genus. I recognize twelve species of Tailorbirds, of which the following is a synoptical table; but there are still a few species which I am unable to determine. These are almost the same as those left undetermined by Mr. F. Moore in 1854, when he gave a careful revision of the genus *Orthotomus* (P. Z. S. 1854, p. 81). The following is my proposed rearrangement of the species:—

a. abdomine albido vel pallidè fulvescente.
a'. mento albido vel fulvescenti-albo.
a''. interscapulio viridi.
a'''. maculâ gutturali nigrâ nullâ.
*a*⁴. fronte rufescente: vertice et nuchâ brunnescentibus: pileo interdum omnino rufescente: rectricibus haud nigro subterminaliter maculatis .... { *sutorius.* *edela.*

b^4. fronte castaneo; vertice cinereo: rectricibus nigro subterminaliter maculatis *frontalis*.

b'''. maculâ gutturali nigrâ distinctâ.

c^4. minor: pileo castaneo: genis et facie laterali albidis, regione paroticâ superiore castaneâ .... *atrigularis*.

d^4. major: pileo cinerascente, capitis lateribus saturatioribus: regione paroticâ conspicuè albâ .... *cinereiceps*.

b''. interscapulio cinereo: capite castaneo.

c'''. rectricibus olivascenti-brunneis, flavido marginatis et nigro subterminaliter maculatis *castaneiceps*.

d'''. rectricibus castaneis.

e^4. remigibus extùs olivascenti-viridibus *derbianus*.

f^4. tectricibus alarum et remigibus externè cinereis dorso concoloribus .... *ruficeps*.

b'. mento cinnamomeo, faciei lateribus concolori.

c''. dorso cinereo: gutture et corporis lateribus etiam cinereis: abdomine medio albo .... *cineraceus*.

d''. dorso viridescente: gulâ cinereâ: corporis laribus viridescentibus: pectore medio et abdomine flavicantibus .... *sepium*.

b. abdomine lætissimè flavo: gutture cum præpectore et pectore summo albis.

c'. rectrice extimâ reliquis concolori, aut in pogonio interno angustissimè albo terminatâ .... *cucullatus*.

d'. rectrice extimâ intùs omnino albâ .... *coronatus*.

1. ORTHOTOMUS SUTORIUS*.

Hab. "The well-known Tailorbird is found throughout all India, from the Himalayas to Cape Comorin and Ceylon, and extending into the Burmese countries" (*Jerdon*, B. Ind. ii. p. 166). Mr. Hume (Nests & Eggs Ind. B. p. 331) states that it breeds throughout India and Burmah, alike in the plains and in the hills (*e. g.* the Himalayas, Nilghiris, and Pegu hills) up to an elevation of from 3000 to 4000 feet. "The breeding-season lasts from May to August, both months included; but in the plains more nests are to be found in July, and in the hills more, I think, in June, than during the other months. Captain Hutton states that the birds, though common at their bases, do not ascend the hills; but this is a

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* *Cf.* Lord Tweeddale's remarks (Walden, B. Burm. p. 120).

mistake; for I have repeatedly taken nests at elevations of over 3000 feet, and Mr. Gammie, writing from Sikkim, says, 'We often find nests of this species near my house at Mongphoo' (which is at an elevation of about 3000 feet). Again, writing from the Nilghiris, Miss Cockburn remarks, 'The Tailorbird is seldom met with on the highest ranges, but appears to prefer the warmer climates enjoyed at the elevation of about 3500 to 4700 feet.'" Mr. Hume also writes (S. F. 1873, p. 194):—"I never met with this species myself in Sindh; but Captain Malden informed me that he had killed a specimen at Jacobabad in March, and since my return I have had a specimen sent me from the neighbourhood of Kurrachee." Major J. Hayes Lloyd (Ibis, 1873, p. 412) records it as common in Kattiawar; and Dr. Stoliczka (J. A. S. B. 1872, p. 240) speaks of his shooting "a specimen while hunting for insects between large stones of an old embankment at the Sir-talao, in the south-western part of Cachh." Captain Butler (S. F. 1875, p. 479) gives it as plentiful on the hills and plains near Mount Aboo and in Northern Guzerat; and Mr. Hume (*l. c.*) adds that it is common throughout Sindh, Cutch, Kattiawar, and Jodhpoor. Mr. Adam (S. F. 1873, p. 381) says the same of the bird near the Sambhur lake. We have in the British Museum numerous specimens from Nepal, collected by Mr. Hodgson; and Mr. Blyth mentions examples obtained near Calcutta (Cat. B. Mus. A. S. B. p. 144). The late Captain Beavan, in his Notes (Ibis, 1867, p. 454), states that he found it common near Barrackpore, but rare in Maunbhoom. Mr. V. Ball (S. F. 1874, p. 414) writes:—"The Indian Tailorbird occurs in the more open parts of the division, but is not common, as far as my observation has gone, in any part of Chota Nagpur." It is included in Mr. W. T. Blanford's List of Birds obtained in the Wardha Valley (J. A. S. B. 1871, p. 273). Dr. Leith Adams (*cf.* Moore, P. Z. S. 1858, p. 488) states that it is found frequenting the mango and other trees in the Deccan; and it was there that the late Colonel Sykes obtained his types of *O. bennetti* and *O. lingoo* (P. Z. S. 1832, p. 90).

Madras specimens of this bird, presented by Dr. Jerdon, are in the British Museum. It breeds in the Nilghiris, as noticed by Miss Cockburn (*vide suprà*). In Ceylon, according to Mr. Holdsworth, it is common in all parts of the island, but especially frequents gardens and the neighbourhood of habitations. "It is as abundant at Nuwara Eliya as at Aripo or other parts of the low country."

Major Godwin-Austen (J. A. S. B. 1870, p. 271) notices it from the North Mymensing district in the Garo hills. In Burmah Captain Beavan obtained it on the Salween river (Ibis, 1867, p. 454); and Dr. Anderson obtained a single specimen at Bhamo, and on the right bank of the Taping river, during the second Yun-nan expedition. According to Mr. Blyth (B. Burma, p. 120), Mr. Gould has had specimens from Tavoy; and Mason states that Tailorbirds are very common at Tavoy, though rare at Moulmein. Mr. Blyth includes this as a second species under the name of *O. edela*; but Lord Tweeddale (*l. c.*) says that he does not know which species is intended by Mr. Blyth, though it is probable that *O. atrigularis* may have been the bird in his mind. The true *O. sutorius* has been procured at Tonghoo and in Karen-nee by Lieut. Wardlaw Ramsay. Mr. Oates (S. F. 1875, p. 135) records it from Thayet Myo as common in the plains; and Mr. Hume states that it was found by Mr. Davison to be diffused and not uncommon in Tenasserim (S. F. 1874, p. 478). Mr. Blyth even says that it extends as far south as Singapore, in which case *O. edela* from Java may be identical (*vide infrà*). He records an actual specimen (Cat. B. Mus. A. S. B. p. 144) from Malacca as being in the Indian Museum.

To the eastward the Indian Tailorbird has been recorded from Siam on Mr. Gould's authority (*cf.* Blyth, B. Burma, p. 120); and Mr. Swinhoe states (P. Z. S. 1863, p. 294) that it is an "abundant resident in South China from Canton to Foochow." It also occurs in Formosa and Hainan (*Swinhoe*, Ibis, 1870, p. 80). At Amoy, writes the same author, it is "found in all the gardens, hedgerows, &c., and is generally seen in pairs."

2. Orthotomus edela.

Hab. Java.

This is the Javan representative of *O. sutorius*; but, not having seen a specimen, I am unable to state whether it is really distinct. Lord Tweeddale (Walden, B. Burma, p. 120) writes:—"The Javan *O. edela* and the Indian *O. sutorius* are barely separable, the Javan bird being chiefly distinguished by having the lores and superciliary stripe pale ferruginous, and not greyish white."

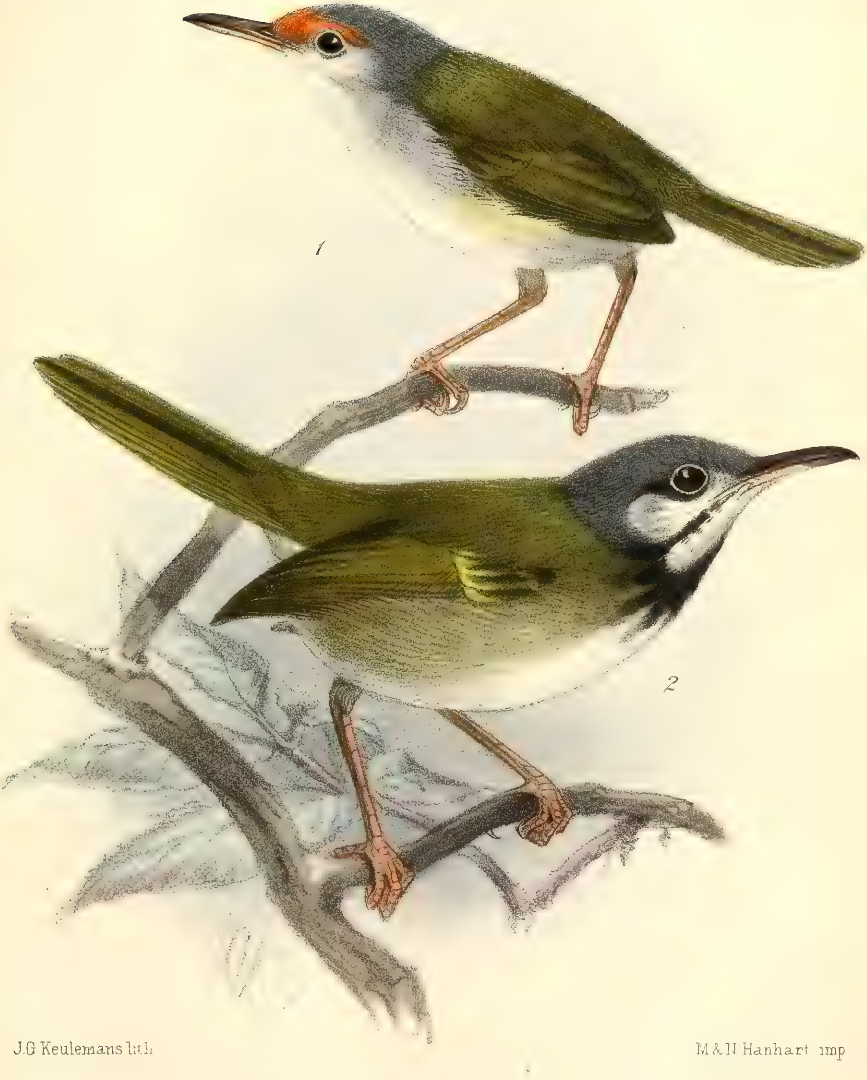
3. Orthotomus frontalis, sp. n. (Plate II. fig. 1.)

Adult male. General colour above olive-green, the wing-coverts coloured like the back; the quills dark brown, externally edged with the same green as the back, the innermost secondaries exactly like the latter; tail olive-brown, with dusky undulations in certain lights, the feathers edged with bright olive-yellow, and tipped with whity brown, before which is an indistinct subterminal shade of darker brown; forehead and a narrow superciliary line bright chestnut; crown, nape, and sides of neck ashy grey; lores fulvescent; sides of face whitish, the ear-coverts shaded with ashy grey; cheeks and entire throat silky white; rest of under surface of body creamy white, the flanks pale greenish yellow; thighs tawny; bill dark horn-brown in skin, the lower mandible yellowish; legs fleshy brown: "iris light hazel" (*Steere*). Total length 3·7 inches, culmen 0·55, wing 1·6, tail 1·5, tarsus 0·75.

Young female. Differs from the male in wanting the parti-coloured head, which is only a shade darker olive-green than the back, the subterminal mark on the tail is very much more pronounced than in the adult male; entire under surface of body silky white. Total length 3·7 inches, culmen 0·55, wing 1·75, tail 1·6, tarsus 0·75.

Hab. Islands of Basilan and Mindanao, Philippines.

The types of this species are in Dr. Steere's collection. The species is a very distinct one, its nearest ally being *O. sutorius*, from which it is at once distinguished by its grey head and chestnut forehead, and also by its having a dark subterminal spot to the tail-feathers.



J.G Keulemans lith.

M & N Hanhart imp

1 ORTHOTOMUS FRONTALIS
2 " CINEREICEPS

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OF NATURAL HISTORY.

4. ORTHOTOMUS ATRIGULARIS.

Hab. Borneo and Malayan peninsula, extending northwards to Tenasserim and Burmah.

In Borneo Mr. Alfred Everett has procured a pair at Bintulu (*vide suprà*, p. 16); and I have already shown that this species, generally known as *O. flavoviridis*, Moore (P.Z.S. 1854, p. 78), is the same as *O. atrigularis* of Temminck, originally described from Borneo, but not since procured in that island till Mr. Everett's researches brought it again to light. The Museum contains a Sumatran specimen collected by Mr. Wallace, as well as others from Penang and the peninsula of Malacca. The latter locality supplied Mr. Moore with the types of his *O. flavoviridis*. Mr. Hume (S. F. 1874, pp. 478, 507) has also described a new species obtained by Mr. Davison at Pahpoon, Kyouknyat, and Thayetchaun, in Tenasserim, as *O. nitidus*. This Lord Tweeddale (B. Burm. p. 121) has correctly shown to be the same as the Malaccan bird; and he records it also as a bird of Burmah (*l. c.*), as it has been procured near Rangoon by Lieut. Wardlaw Ramsay.

5. ORTHOTOMUS CINEREICEPS, sp. n. (Plate II. fig. 2.)

Adult male. General colour above bright olive-green; wing-coverts and quills dark brown, all the feathers broadly edged with the same green as the back, the greater coverts margined and tipped with brighter yellow; tail dark brown, narrowly tipped with brighter yellow, but without any darker subterminal bar; head dark ashy grey, the lores fulvescent; sides of face and a malar stripe blackish grey; ear-coverts white; chin and sides of upper throat white; centre of throat and jugulum black, forming a large patch; fore neck, sides of body, flanks, under tail-coverts, and thighs bright olive-green, the latter slightly tinged with rufous; under wing-coverts yellowish, the edge of the wing bright yellow; bill horn-black, the lower mandible yellowish in skin; feet fleshy brown in skin; iris light hazel. Total length 5 inches, culmen 0·65, wing 1·85, tail 1·9, tarsus 0·9 (*coll. J. B. Steere*).

Hab. Island of Basilan, Philippines.

This beautiful species is distinguished from all others of the genus *Orthotomus* by its grey head and pure white ear-coverts.

6. Orthotomus castaneiceps.

Hab. Guimaras and Panay, Philippine Islands.

This distinct species was described by Lord Tweeddale (Walden, Ann. Nat. Hist. ser. 4, x. p. 252, et Tr. Z. S. ix. p. 195) from the island of Guimaras; and Dr. Steere obtained another, which agrees exactly with the type kindly lent me by Lord Tweeddale, in the neighbouring island of Panay.

7. Orthotomus derbianus.

Hab. Philippine Islands.

Specimens of this bird are in the Derby Museum at Liverpool (*cf.* Moore, P. Z. S. 1854, p. 309, pl. lxxvi. descr. orig.) and in the British Museum; but the exact island inhabited by the species has not been determined; it will probably be found to be Luzon.

8. Orthotomus ruficeps.

Hab. Malacca, Sumatra, Borneo, and Palawan.

From Malacca we have in the British Museum two specimens—one presented by Captain Stackhouse Pinwell, and the other procured by Mr. Wallace. A specimen from Sumatra is also in the national collection. Two specimens were also sent by Mr. Hugh Low in a recent collection made by him in North-western Borneo, opposite the island of Labuan. Doria and Beccari met with it at Sarawak (Salvad. Ucc. Born. p. 249). Dr. Steere likewise obtained a specimen in the island of Palawan, Philippines.

9. Orthotomus cineraceus.

Hab. Malacca, Sumatra, and Borneo.

From an examination of a very large series recently brought from North-western Borneo and Labuan by Mr. Hugh Low, I am able to affirm that *O. borneonensis* of Salvadori (Ucc. Born. p. 247) is the fully adult male of *O. cineraceus*, Blyth (J. A. S. B. xiv. p. 489). It appears to be a common bird in Borneo, as it has been obtained not only in the above-mentioned localities, but at Sarawak by Doria and Beccari, at Jambusan by Mr. Alfred Everett, and at Banjermassing by the late Mr. Mottley. A Sumatran specimen, collected by Mr. Wallace, is in the British Museum, which also possesses a skin presented to this institution by Captain Stackhouse Pinwell; it was from Malacca; and Mr. Blyth likewise obtained his original specimens from this latter locality.

10. ORTHOTOMUS SEPIUM.

Hab. Java, Sumatra, and Lombock.

This Tailorbird was originally obained in Java by Dr. Horsfield, and described by him (Trans. Linn. Soc. xiii. p. 166). Mr. Wallace obtained it both in East and West Java; his specimens are now in the British Museum, which also contains an example from Sumatra; a young bird was procured by Mr. Wallace in the island of Lombock, which we believe to be referable to the present species, and not to *O. cineraceus,* although the two birds in their immature stages are rather hard to distinguish.

11. ORTHOTOMUS CUCULLATUS.

Hab. Java.

So far as we know, this bird is entirely confined to the island of Java. Mr. Wallace obtained a specimen of it in Western Java in 1861.

12. ORTHOTOMUS CORONATUS.

Hab. Eastern Himalaya, ranging eastward to the Burmese hills.

The types of this species are in the British Museum. It is closely allied to *O. cucullatus,* but is distinguished by having the entire inner web white on the outer tail-feathers. Dr. Jerdon (B. Ind. ii. p. 168) observes:—"I procured specimens of this new species of Tailorbird from the vicinity of Darjeeling, where it occurs in the warmer valleys. A nest and eggs were brought to me, said to be those of this bird, similar to that of *O. longicauda,* but not so carefully made; the leaves were loosely attached, and with fewer stitches. The eggs were two in number, white, with rusty spots." Major Bulger (Ibis, 1869, p. 166) also met with this species in the plains below Darjeeling. To the eastward it occurs in the Khasi hills, as Major Godwin-Austen, in his list of the birds of these and the North Kachar hills (J. A. S. B. 1870, p. 107), mentions a specimen being shot near Cherra Punji in October. Lieut. Wardlaw Ramsay has also obtained it in Burmah in the Tsan-koo hills at an elevation of 3000 feet (*cf.* Walden in Blyth, B. Burm. p. 121).

Besides the above twelve species there are three which I have not been able to make out, viz. :—*O. longirostris,* Swains. An. in Menag. p. 343, *Hab.* Australia! *O. maculicollis,* F. Moore, P. Z. S. 1854, p. 309, *Hab.* Malacca; and *O. hugelii,* Pelz., *Hab.* New Holland (?).

P.S. Since this paper was finished Mr. T. J. Moore has been so kind as to send me from the Derby Museum the type of *O. maculicollis* for examination. It is said to have been obtained by Mr. Cuming in Malacca; but I think it just as probable that the real locality may ultimately turn out to be one of the Philippine Islands. It appears to be a distinct species; for although closely allied to *O. sutorius,* it differs in its blackish brown ear-coverts and sides of neck, which are distinctly and rather broadly streaked with white. The following is a description of the type:—

General colour above olive-green; wings brown, the least wing-coverts edged with olive-green, like the back, the greater series and quills with brownish olive; tail brown, undulated under certain lights, the feathers margined with olive-green; crown of head rufous, the occiput and hind neck rather ashy brown; feathers in front of and round the eye buffy whitish; ear-coverts and sides of neck blackish brown, with distinct longitudinal streaks of white; cheeks and under surface of body white, the throat purest, the breast somewhat tinged with buff; flanks dull olive; sides of upper breast dark grey; under wing-coverts and edge of wing light buff, slightly washed with olive-yellow; quills below ashy brown, with a tawny buff edging along the inner web. Total length 4·3 inches, culmen 0·55, wing 1·8, tail 1·7, tarsus 0·8.

VIII.—*Notices of recently published Ornithological Works.*

1. Père David's '*Third Journey in China.*'

[Journal de mon troisième Voyage d'Exploration dans l'Empire Chinois: ouvrage contenant 3 cartes. Par M. l'Abbé Armand David, de la Congrégation de la Mission. Two vols. Paris: 1875.]

Père David's name requires no introduction to the readers of 'The Ibis.' We all know the extraordinary success that has attended his efforts to make known to science the natural wonders of the interior of the Chinese Empire. Many of us have seen the splendid new forms and brilliant novelties with which he has enriched the Museum of Paris, and have admired the grand discoveries which have thrown a flood of light on the true relations of the Chinese avifauna.

Père David's earlier Journals* have been published in the Bulletin of the 'Nouvelles Archives du Muséum.' In these he has given us an account of his first expedition to Mongolia in 1860, and of his second remarkable journey to Setchuan and Moupin in 1868 and the following years. In the present volumes he presents us with a narrative of his third great journey, commenced in 1872, in which he traversed the central provinces of the empire, and made large collections in two previously unknown mountain-ranges of the interior.

The pages of Père David's diary are rife with interesting notes on the various birds met with, to which, even when borne down by severe sickness, he appears to have devoted unflagging attention. Leaving Pekin at the beginning of October 1872, our traveller journeyed nearly due south to the banks of the Hoang-ho, which he crossed on the 24th of October, and, turning westward along its left bank, passed several months at various localities in the Tsing-ling mountains, which lie between this part of the Hoang-ho and some of the northern confluents of the Yang-tze. Having crossed to the south of the range, he embarked on a native boat on the 17th of April 1873, and descended the Han to Hankow, which he did not reach without suffering various maladies and misfortunes. After a short rest here and at Kiou-Kiang, lower down the Yang-tze, Père David resolved to make another excursion into the mountains of Kiangsi, in spite of his indifferent health. With this journey he occupied the last six months of 1873, returning to Kiou-Kiang in an almost exhausted state at the end of January 1874, and shortly afterwards to Europe.

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* Journal d'un Voyage dans le Centre de la Chine et dans le Thibet Oriental. Par M. l'Abbé Armand David. Nouv. Arch. Mus. d'H. N. vol. viii. et ix. (Bulletin).

Two maps serve to point out very accurately the author's route, and add great interest to the narrative.

Besides numerous notes on known species interspersed throughout the narrative, as already mentioned, Père David gives several short indications of supposed new species discovered during his travels—*Ithaginis sinensis* (vol. i. p. 174), *Pomatorhinus gravivox* (ibid. p. 200), *Carpodacus lepidus* (ibid. p. 205), *Pnoepyga halsueti* (ibid. p. 210), *Suthora cyanophrys* (ibid. p. 345), *Psaltria sophiæ* (vol. ii. p. 167), *Pomatorhinus swinhoii* (ibid. p. 269), *Trochalopteron milni* (ibid. p. 271), and *Machlolophus rex* (ibid. p. 275). Of these new species we shall, no doubt, have fuller accounts in the work which Père David is now preparing upon the mammals and birds which he collected in China. He also makes a new genus, *Babax* (vol. i. p. 181), for *Garrulax lanceolatus*, Verreaux, and gives (vol. ii. p. 39, et seq.) a nominal list of the birds (195 in number) observed in Southern China from October 1872 to the end of April 1873.

It would be of great advantage to science if Père David would republish the Journal of his first two journeys in a similar manner, and with accompanying notes, to show us where "Moupin" and the other *terræ incognitæ* where he made so many wonderful discoveries, really are.

2. *The Marquis de Compiègne's 'Æquatorial Africa.'*

[L'Afrique Equatoriale. Par le Marquis de Compiègne. Paris: 1876. 2 vols. E. Plon & Co.]

This is hardly to be called a scientific book; it is nevertheless one which our ornithological friends will, we think, find both instruction and amusement in reading. The Marquis de Compiègne and his friend M. A. Marche made a two years' expedition to Gaboon in 1872 to collect objects of natural history. Their adventures are given in an entertaining way by the Marquis in the two small volumes now before us. They penetrated deep into the country first explored by Du Chaillu, and obtained a fine series of birds, of which their agent, Mons. Bouvier of Paris, has published a list*. This catalogue, or a nearly corresponding one, is also given as an appendix to the present work. We may call particular attention to the author's account of his visit to the sacred islands of Lake Zouangué, where myriads of Darters, Ibises, and Pelicans were found breeding in community (vol. i. p. 278).

3. *Riesenthal's 'German Birds of Prey.'*

[Die Raubvögel Deutschlands und des angrenzenden Mitteleuropas. Darstellung und Beschreibung der in Deutschland und den benachbarten Ländern von Mitteleuropa vorkommenden Raubvögel. Allen Naturfreunden, besonders aber der deutschen Jägerei gewidmet von O. v. Riesenthal. Text, 8vo. Atlas, small folio. Cassel: 1876.]

Hr. Th. Fischer has politely forwarded to us the first part of the atlas and letterpress of this proposed new work on the Raptores of Central Europe. It contains chromolithographs of *Buteo vulgaris*, *B. lagopus*, and *Pernis apivorus*, adult and young. The drawings are well executed and show considerable spirit; but we observe that the plates are rather inclined to be rubbed off against their opposite neighbours.

4. *Allen's 'Birds of Lake Titicaca.'*

[Exploration of Lake Titicaca by Alexander Agassiz and S. W. Garman. III. List of Mammals and birds. By J. A. Allen, with Field-notes by Mr. Garman. Bull. Mus. Comp. Zool. Cambridge, Mass. vol. iii. nos. 15, 16. July 1876.]

The collection of birds made by Mr. Garman during Mr. Alexander Agassiz's expeditition to Lake Titicaca in the first months of 1875, of which an account is given in this paper, contains about 230 specimens, referable to 69 species. "The resemblance of the bird-fauna of Lake Titicaca to that of the neighbouring portions of the highlands not far to the eastward, visited by Mr. Whitely, is shown by the fact that, of Mr. Whitely's small collection of 47 species, made at and near Tinta, on the Vilcamayo, south-east of Cuzco (11,000 feet above sea-level), 27, or more than one half, are contained in Mr. Garman's collection."

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* Catalogue Géographique des Oiseaux recueillis par MM. A. Marche et le Marquis de Compiègne dans leur voyage comprenant les pays suivants, Sénégale, Gambie, Cazamance, Sierra-Léone, Bonny, Vieux-Calabar, Cap Lagos, Fernando-Po, Principe, Gabon, Fernand-Vaz, et Rivière Ogooué, pendant les années 1872–74, par A. Bouvier. 8vo. Paris: 1875.

Two species are described as new—an Ibis, *Falcinellus ridgwayi,* allied to *F. guarauna,* and a Gallinule, *Gallinula garmani,* allied to *G. galeata,* but much larger and darker.

The singular short-winged Grebe, *Centropelma micropterum* (figured in Ex. Orn. pl. xcv. p. 189), is stated to be very common about all parts of the lake where the water is at all shallow. "It feeds on fishes, batrachians, &c. In February young were taken about two thirds grown. They are unable to rise from the water; but by flapping their rudimentary wings and striking the water with their feet they manage to progress quite rapidly for a considerable distance."

"They dive quickly at the discharge of a gun—so quickly that, unless taken unawares, they will dodge the shot—and escape, often swimming a long distance under water before reappearing." Thirteen specimens were obtained of this rare species, which seems to be confined to this lake.

5. *'Proceedings' of the Linnean Society of New South Wales.*

[The Proceedings of the Linnean Society of New South Wales. Vol. i. parts 1 & 2. 8vo. Sydney: 1876.]

The Linnean Society of New South Wales has been instituted at Sydney "for the cultivation and study of the science of natural history in all its branches" under the presidency of Mr. W. Macleay, and seems already to number upwards of a hundred members. We have seen two parts of the 'Proceedings' (pp. 1–168), which are both dated 1876, though a notice is stuck into the first part that the "first twenty pages of this part were printed and circulated ten months ago."

They contain the following ornithological papers by Mr. E. P. Ramsay :—

"Description of a new *Ptilotis* from the Endeavour River," p. 9 (*P. macleyana*=*P. versicolor*, Ramsay, P. Z. S. 1868, p. 386, nec Gould); "Description of a new *Trichoglossus*," p. 30 (*T. amabilis*=*T. aureocinctus*, Layard, Ann. Nat. Hist. ser. 4, vol. xvi. p. 344); "Characters of a new Genus and Species of Passerine Bird from the Fiji Islands," p. 41 (*Vitia ruficapilla*=*Drymochæra badiceps*, Finsch); "Descriptions of a new Species of *Merula* and *Rhipidura* from the Fiji Islands," p. 43 (*Merula ruficeps* and *Rhipidura personata*, both, we believe, also described by Mr. Layard); "A new *Pachycephala* from Fiji" (*P. kandavensis*); "A new *Pachycephala* from New Britain," p. 66 (*P. citreogaster*!); "Description of a new *Lamprolia*," p. 68 (*L. klinesmithii*=*L. minor*, Finsch); "Description of a new *Ptilinopus* from Malacola, one of the New Hebrides," p. 133 (*P. corriei*); and "Description of a new Plover from North Australia," p. 135 (*Ægialitis mastersi*, allied to *Hiaticula inornata*, Gould).

Mr. Ramsay also contributes "Remarks on a collection of birds lately received from Fiji," and adds "A List of all the Species at present known to inhabit the Fiji Islands." The collection, from which it would appear the new species previously described were obtained, contained examples of 37 species. The list of remaining species is simply compiled from Gray's 'Hand-list,' the author having apparently no knowledge of Hartlaub and Finsch's 'Ornithologie Centralpolynesiens,' by far the most important work ever published on Polynesian ornithology.

Mr. W. Macleay, the President of the new Society, gives (p. 36) an interesting account of his cruise to Torres Straits and Southern New Guinea in the 'Chevert' in 1875, and of the zoological collections made during the expedition; and later on (p. 44) Mr. Masters, who accompanied the expedition, gives us the first part of his report on the bird-collection, which contained about 1000 specimens. In the present part Mr. Masters confines his attention to the species obtained in Australia and on the adjacent islands of Torres

Straits. Of these 136 are enumerated, amongst which are described, as new, *Podargus gouldi* from the Gulf of Carpentaria, *Pachycephala robusta* from Cape York, *Colluricincla superciliosa* from Cape Grenville, *Gerygone simplex* from the Gulf of Carpentaria, *Sericornis brunneopygius* from Cape York, *Zosterops ramsayi* from Palm Island, *Z. flavogularis* from Cape Grenville and the adjacent islands, *Megapodius assimilis* from Dungeness and Bet Islands, *Sterna nigrifrons* from Warrior Reef, and *Sternula inconspicua* from Cape York.

6. *Rowley's 'Ornithological Miscellany.'*

[Ornithological Miscellany. Edited by George Dawson Rowley, M.A., F.L.S., F.Z.S., Member of the British Ornithologists' Union. 4to. London: Trübner & Co. Part III. January 1876; Part IV. May 1876; Part V. October 1876.]

Of this most appropriately named work, which has already been noticed in 'The Ibis' (1875, pp. 261, 509), three parts have been issued during the past year, graced with many excellent plates of ornithic rarities. Messrs. Finsch, Salvin, Sharpe, and A. Newton have been invited to contribute to its pages; and all ornithologists must be grateful to Mr. Rowley for the liberality with which he supplies illustrations to the various memoirs. Those of the Fijian novelties (*Trichoglossus aureocinctus, Myiagra cæruleo-capilla,* &c.) recently discovered by Mr. E. L. Layard are specially acceptable; and we trust Mr. Rowley will not fail to continue them.

7. *Blanford's 'Zoology of Eastern Persia.'*

[Eastern Persia, an account of the Journeys of the Persian Boundary Commission 1870–71–72. Vol. II. The Zoology and Geology, by W. T. Blanford, A.R.S.M., F.R.S. 8vo. London: 1876. (Macmillan & Co.)]

All ornithologists will, we are sure, accord a glad welcome to Mr. Blanford's volume on the zoology and geology of Persia, which is quite worthy of the high reputation of the author, and fills up what has been long an important void in our science. Looking to the geographical position of Persia, between the carefully studied lands of Europe on the one side and British India on the other, it will be at once obvious that a careful account of its zoology would throw light upon many problems in the faunas of both countries. Hitherto we have had no work to refer to on this subject, except De Filippi's 'Note di un Viaggio in Persia,' and various smaller memoirs and fragmentary notices. Mr. Blanford bases his work mainly on the collections made by Major St. John, with the assistance of a native collector from the Indian Museum, Calcutta, in the years 1869–71, together with those formed by himself in 1872 during the expedition of which an account is given in the first volume of the present work. As regards birds, the united collections contained 1236 specimens, belonging to 248 species, mostly from Southern Persia and Baluchistan, Mr. Blanford, however, has not failed to work up the references to birds collected or observed in Persia by previous travellers, so as to make his ornithological account of the country as complete as possible. Still the number of species as yet ascertained to inhabit Persia (384) is, as Mr. Blanford observes, not large, and it is probable that further research will add greatly to the list.

The new species discovered by Mr. Blanford and his coadjutors in Persia have been already described in 'The Ibis'*. Mr. Blanford now gives us excellent figures from Mr. Keulemans's pencil of many of these novelties, which serve to set off his attractive volume. In fine we may say that Blanford's 'Zoology of Persia' is indispensable to the student of Palæarctic ornithology.

8. *Finsch's 'Ornithology of the Pacific Islands'*: Part ii.

[Zur Ornithologie der Südsee-Inseln. II. Ueber neue und weniger gekannte Vögel von den Viti-, Samoa- und Carolinen Inseln, von Dr. Otto Finsch in Bremen. Journal des Museum Godeffroy. Heft xii. 4to. Hamburg: 1876.]

In this memoir Dr. Finsch continues his account of the ornithological novelties obtained by the collectors of the Museum Godeffroy in the Fiji, Samoan, and Carolina Islands, in his usual excellent style. The new species described are:—*Ptilotis xanthophrys* from the Navigators', and *Zosterops ponapensis, Volvocivora insperata, Myiagra pluto, Rhipidura*

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* See Ibis, 1873, pp. 86–90, 225–227; 1874, pp. 225–227.

kubaryi, and *Aplonis pelzelni* from Ponapé, of the Seniavin group, which has lately been explored by Hr. J. Kubary, one of Hr. Godeffroy's scientific staff. Of this island also a complete account of the birds is given, showing that 22 species are known to occur in it. Of these one of the most remarkable is the *Trichoglossus* (*Chalcopsitta*) *rubiginosus*, long erroneously supposed to be from the Moluccas. Eight examples of this fine and distinct Lory, now known to be peculiar to the little island of Ponapé, were obtained by Hr. Kubary.

Dr. Finsch also gives a new name to the *Artamus* of the Pelew Islands (*pelewensis*), which he has hitherto united with the widely spread *A. leucorhynchus* (sive *leucogaster*); and Hr. Th. Kleinschmidt, of Ovalau, contributes interesting notes on the habits of *Chrysœna victor* and *Ptilotis procerior*. Two good chromolithograph plates accompany the memoir and give figures of *Trichoglossus aureicinctus*, Layard, *Petroica kleinschmidti*, Finsch, *Zosterops ponapensis*, Finsch, *Rhipidura kubaryi*, Finsch, and *Aplonis pelzelni*, Finsch.

9. *Shelley's 'Monograph of the Sun-birds.'*

[A Monograph of the Cinnyridæ, or Family of Sun-birds. By Captain G. E. Shelley, F.Z.S., F.R.G.S., &c. 4to. London: published by the author at the Office of the British Ornithologists's Union, 6 Tenterden Street, Hanover Square, W.]

Capt. Shelley's monograph of the favourite group of Sun-birds will form, when complete, an acceptable companion-volume to Mr. Sharpe's 'Kingfishers' and Messrs. Marshall's 'Barbets,' being of the same size and fashion. The figures are in Mr. Keulemans's best style; and the letterpress contains a summary of all that is known about the various species. But why does Capt. Shelley call a Sun-bird "*brasilianus*" when, as he knows well, the term conveys an egregious error on the face of it? Such a course is altogether opposed to the Stricklandian code of nomenclature, which we suppose he intends to follow. And why, on the other hand, does he call the family "Cinnyridæ," when *Nectarinia* is the older genus, and should consequently give the title to the larger group?

While offering these small criticisms upon our friend's labours, we may also express a hope that he will not adopt the numerous minor subdivisions of Nectariniidæ that have lately come into fashion, founded, not on structural form, but simply on styles of colour. There is no sort of advantage to science gained by the employment of such terms generically. Even our author's *Urodrepanis* (gen. nov.), founded upon the *Æthopyga christinæ* of Formosa, as having the "two centre tail-feathers abruptly narrowing into very fine points," seems to us rather unnecessary! It would likewise be a much more comfortable plan if the plates and descriptions of the same species were issued together in the same part. To effect this might give some little trouble to the author, as we are aware; but it would be a great convenience to the subscribers.

The 'Monograph of the Sun-birds' will be completed, as we learn from the prospectus, in twelve Parts, "which will be published as rapidly as possible consistently with a proper execution of the plates." We cordially wish our author success, and trust that all our friends and readers who have the opportunity will not fail to assist him with specimens and intelligence.

10. *Boucard's 'Catalogus Avium.'*

[Catalogus Avium hucusque descriptarum. Auctor Adolphus Boucard. London: 1876. 8vo, pp. 350.]

This is a list of the names of the species of birds, with a slight indication of their *patriæ,* beginning at the Struthiones and ending with the Trochili. Mr. Boucard recognizes 11,030 species, divided into 2456 genera.

Mr. Boucard has compiled his catalogue from Gray's 'Hand-list,' Sclater and Salvin's 'Nomenclator Avium Neotropicalium,' and Sharpe's 'Catalogue' (vols. i. & ii.), and has produced a handy volume which will certainly not be without use to ornithologists. He has a more ambitious project in view—that is, a 'Genera of Birds,' of which the present work is merely a forerunner. The classification adopted is nearly that of the 'Nomenclator Avium Neotropicalium' reversed. There are a good many misprints; and the names of the new "orders" are not very classically chosen. "Rallæ" should be "Ralli," and "Pterocles" "Pterocletes" or "Pteroclæ." To reunite the Hirundinidæ with the Macrochires is a frightfully retrogade step, which we could not have believed our author would have been guilty of!

11. *Brüggemann's 'Birds of Celebes.'* *

[Beiträge zur Ornithologie von Celebes und Sangir von Dr. Friedrich Brüggemann. 8vo. Bremen: 1876.]

It is with much pleasure that we welcome a new recruit to the ranks of working ornithologists. Dr. Brüggemann founds the present essay principally upon a collection made in 1873–74 by Dr. George Fischer, a medical officer of the Dutch Government, partly during excursions from Menado into Minahassa, in Celebes, and partly on Sanghir Island. The Darmstadt collection, however, had previously a series of Celebes birds, mostly presented by Hrn. v. Rosenberg and Riedel. Altogether the Grand-ducal museum contains more than 1200 Celebes and Sanghir skins, of which 1066 are due to Dr. Fischer's researches.

Dr. Brüggemann follows the arrangement of Lord Tweeddale's well-known memoir on the birds of Celebes in the Zoological Society's 'Transactions,' but adds many additional species. He describes as new:—*Astur tenuirostris, Halcyon cyanocephalon,* and *Cuculus virescens* from Celebes; *Pitta palliceps* from Sanghir; *Pitta kochi* from Luzon; *Monarcha commutata* from Celebes; *Artamus brevipes* from the Pacific Islands (!); *Corvus annectens* from Celebes; *C. fallax* and *C. modestus,* collected as *C. annectens* by Rosenberg, but without localities annexed; *Ptilonopus nuchalis* from Sanghir; *P. fischeri* and *Carpophaga pœcilorrhoa* from Celebes; *Gallinula lepida,* ex loc. ign.; and (in an appendix) *Cuculus asturinus* from Celebes. A new genus, *Schizoptila,* is proposed for *Rallina rosenbergi,* Walden. Altogether fourteen additional species are added to the avifauna of Celebes, which now comprises 229 species.

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* *Cf.* remarks by Count T. Salvadori (Ibis, 1876, p. 385).

12. *Gurney's 'Rambles of a Naturalist.'*

[Rambles of a Naturalist in Egypt and other Countries, with an analysis of the claims of certain foreign Birds to be considered British, and other Ornithological Notes. By J. H. Gurney, Jun., F.Z.S. 1 vol. 8vo. London: 1876.]

This volume is a kind of ornithological *omnium-gatherum*, containing an account of the recent travels and experiences of an ardent devotee of our science in various parts of the world. Mr. Gurney first goes "to Russia and back," and gives us an account of the birds to be met with in the market of St. Petersburg there, and a few notes on the museums and zoological gardens which he visited. Next we have his journey in the Algerian Sahara, where, as the readers of 'The Ibis' already know, he made many interesting observations*. The notes taken during the Franco-German war, which follow, relate to a much better-known fauna, but still contain some interesting information. The most important portion, however, of Mr. Gurney's volume is the account of his six months' bird-collecting in Egypt, which is followed by a systematically arranged series of notes upon all the species of birds obtained, 223 in all. Of these *Anser erythropus, Buteo desertorum, Cypselus apus* (as distinct from *C. pallidus*), and *Anas angustirostris* are added to the Egyptian list for the first time "on positive information." The right of admission was also confirmed to sundry doubtful species, such as *Circus cineraceus* and *Porzana pygmæa*. Some "passing notes on the birds of Italy," together with an analysis of the claims of certain birds to be considered British, and a few minor papers conclude Mr. Gurney's interesting and instructive volume, which we beg leave to recommend most sincerely to the notice of his brother ornithologists.

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* See Mr. Gurney "On the Ornithology of Algeria," Ibis, 1871, pp. 68, 289.

IX.—*Letters, Announcements, &c.*

The following letters, addressed "To the Editors of 'The Ibis,'" have been received:—

33 Carlyle Square, Chelsea, S.W.
6th November, 1876.

Sirs,—In glancing over the 'Catalogue of the Birds in the Museum of the East-India Company,' vol. i., my attention was called to sp. 370 (p. 246), *Pycnonotus sinensis*. Among the specimens referred to this species I find "B. (*P. sinensis* ?) Siam. From Finlayson's collection," and further on the note, "The specimen from Siam differs in having the head entirely black, which in the other specimens is wreathed with white, but agrees in other respects with the other." It will be easy to see that the Siamese bird is the same as my *Ixos hainanus* (Ibis, 1870, p. 253). On the Liuchow peninsula of the Chinese main I found the same bird in company with the typical *P. sinensis*, and secured the latter. It is interesting to find that the Hainan form occurs in Siam. It would be further interesting to ascertain whether the true *P. sinensis* also occurs so far south.

Yours &.,
Robert Swinhoe.

Sirs,—In my paper on the *Phylloscopi* I am afraid I have been guilty of somewhat wholesale slaughter. I have endeavoured to consign *Gerygone superciliosa* of Wallace, *Phylloscopus brooksi* of Hume, *Phyllopneuste intermedia* of Severtzoff, *Phylloscopus abyssinicus* of Blanford, *Hypolais graminis* of Severtzoff, and *Phylloscopus brehmi* of Homeyer to the *limbo* of synonyms. I regret very much to be obliged to add another victim to the list; but in this instance at least the *coup de grâce* comes with a better grace from me than it would from any one else. I understand that the present number of 'The Ibis' will contain an account of the discovery for the first time in Asia of the Pipit (*Anthus seebohmi* of Dresser) which Harvie Brown and I discovered for the first time in Europe in 1875. I am afraid I hold in my hand evidence that this bird is the *Anthus gustavi* of Swinhoe (P. Z. S. 1863, p. 90). Mr. Swinhoe has kindly furnished me with three skins of his bird, obtained on the 31st of May, 1873, in North China (see Ibis, 1874, p. 442), suggesting that I should compare them with my Petchora skin. They agree in the rich and varied colouring of the upper parts, in the large stout bill, in the arrangement of the primaries, in the elongated hind claw, and in the lighter portion of the rectrices being dark smoky buff. This Pipit apparently breeds in the arctic regions of the Petchora, the Ob, and probably as far east as the Zena, as Swinhoe mentions (Ibis, *loc. cit.*) an example from Lake Baical. It passes through North and South China on migration, and should be looked for in winter in the Philippine Islands and the Malay archipelago.

Yours truly,
HENRY SEEBOHM.

Sheffield, 24th Dec. 1876.

P.S. I may add that Mr. Dresser has compared one of the Amoy skins with his specimen of the Petchora bird, and agrees with me in the identity of the two species.

The Ornithological Museum of Signor E. Turati.—The collection of birds belonging to Count Ercole Turati of Milan is now one of the largest and best-arranged private collections in Europe. It contains upwards of 14,600 specimens, belonging to about 6300 species, all excellently mounted and in good order. These are arranged in several rooms in the Casa Turati, in the Via Maraviglie, at Milan. Amongst the collections now merged in the Turatian Museum may be mentioned the Woodpeckers of Malherbe, the Paradise-birds of Elliot, the Humming-birds of Verreaux, and the Eggs of Des Murs. There are many rare and typical specimens, amongst which we may mention, as observed during a recent visit, *Nestor productus, Trichoglossus wilhelminæ* and *T. josephinæ, Iridornis jelskii, Pipra heterocerca, Meropogon breweri, Serresius galeatus,* and *Crossoptilon drouyni.* The unique specimen of *Synœcus lodoisiæ,* Verreaux, of which phenomenon we have previously spoken*, seems, after all, to be perhaps only an individual variety of *Coturnix dactylisonans*. Of the fact of its having been obtained in Lombardy we believe there can be no question. No lover of birds who visits Milan should omit to pay a visit to the Casa Turati and its hospitable proprietor.

New Series of the Zoologist.—The 113th number of the 'Zoologist,' issued last month, closes the second series of this popular periodical, which has done very much, as most of our readers well know, to promote the study of natural history among the rising generation. The number is for the most part very appropriately occupied with a portrait and memoir of the late Mr. Edward Newman, the founder and, for thirty-four years, editor of the 'Zoologist.' A new series, commenced on the 1st of this month, is edited by our colleague Mr. J. E. Harting, whose abilities to carry on the good work satisfactorily no one is likely to question.

New Work on the Fauna of Belgium.—We have received a prospectus and specimen of a new work on the fauna of Belgium, to be entitled "Faune Illustrée des Vertébrés de la Belgique par Alphonse Dubois," and to be published by Muquardt and Co., of Brussels. The series containing the birds will be issued in 140 livraisons at 2 francs each, and will give coloured figures of the birds, adult and young, and their eggs and nests. This series will ultimately form three volumes, 8vo.

Tonquin and the way there.—Amongst the Parliamentary papers lately issued is a Report by Sir B. Robertson, H.B.M. Consul at Canton, of a visit lately paid by him to Haiphong and Hanoi—two new ports lately opened by the French at Tonquin. Hanoi, the capital of Tonquin, is situated on the Song-koi, or Red River, about 100 miles from its mouth.

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* See Ibis, 1862, p. 380, and Mr. Howard Saunders's remarks, Ibis, 1869, p. 393.

The city, as here described, "rises gradually from the river, and, embedded in trees and foliage, has a charming appearance." As there is a French settlement and Consul and a flourishing Christian Mission here, there would probably be neither difficulty of access nor danger for foreign residents; and the country, lying between China and Siam, would be a most interesting one for a naturalist. The nearest ground ever investigated ornithologically, so far as we know, is Hainan, to which Mr. Swinhoe once paid a flying visit. We should be inclined to recommend Tonquin to the notice of any wandering Member of the B. O. U. who may be looking after entirely fresh ground (a rather difficult thing to be had in these days) for his ornithological experiences.

Death of von Heuglin.—We much regret to have to announce the death of one of the most active and laborious ornithologists of the present day. Freiherr Theodor von Heuglin, of Ober-Türkheim, in the Kingdom of Württemberg, died suddenly and prematurely in November last—we believe, from a severe attack of pneumonia. We have at present no available materials for a notice of the life of this distinguished ornithologist, but understand that a memoir on the subject is being prepared by Baron R. König-Warthausen for Cabanis's Journal, which will, no doubt, do him ample justice. Herr von Heuglin's last and most complete work is his recently finished 'Ornithologie Nordost-Afrikas,' which will alone render his name imperishable in the annals of ornithology. We may add that within a few weeks only of the time of his decease one of the editors of this Journal was in correspondence with him on the subject of undertaking a scientific exploration of the island of Socotra; so unexpected was his untimely death, and so ready was he for further work of this nature.

Irruption of Snowy Owls from the North.—Dr. T. M. Brewer, writing to us from Boston, U. S., speaks of an unusual migratory inroad of Snowy Owls which has taken place in the N.E. portion of the United States during the past autumn.

He says (under date Dec. 3rd):—"Since September, and before I reached home from Europe, we have been having a most wonderful flight of Snowy Owls (*Nyctea nivea*). How far west it has extended I have not yet heard; but from New Brunswick on the east to western New York State the whole tract has been covered by the extraordinary prevalence of these Owls.

'They come not single spies but in battalions!'

Mr. Boardman, writing to me from St. Stephen's, New Brunswick, says, 'We have had a wonderful flight of Snowy Owls. They were in flocks of fifteens and twenties moving southwards. I never before heard of so many. Most of those seen along the coast seemed to be following the migratory birds. Some were here early in September and in very mild weather. They were easily captured.' The same peculiarities were observed here. The Owls swarmed everywhere, and were obtained in large numbers, so that our taxidermists could not prepare all that were brought to them. At Hingham, on the coast, quite a number were killed and brought to my nephew. In Utica, New York, one was ignominiously knocked on the head by an old woman with a broomstick, the bird having been caught robbing her hen-roost."

The same phenomenon, we may add, has also manifested itself in the eastern hemisphere. Three examples of the Snowy Owl, one of which was captured in Ireland, are now in the Zoological Society's Gardens. Mr. Cross, the well-known dealer at Liverpool, says he never had so many of this bird. Every steamer from America brings in two or three, so that at one time he had nearly thirty in his possession.

THE IBIS.

FOURTH SERIES.

No. II. APRIL 1877.

X.—*Review of the Specimens of* Trochilidæ *in the Paris Museum, brought by D'Orbigny from South America.* By D. G. Elliot, F.R.S.E. &c.

Mindful of the importance of always referring to the types of described species of birds or mammals, when possible, in order to ascertain exactly what an author may have had before him when bestowing for the first time a name upon any animal, I have lately passed in review such of the specimens of D'Orbigny's Humming-birds as are still to be found in the Paris Museum, which are mentioned by himself and Lafresnaye in their 'Synopsis Avium;' and I have embodied in the present paper whatever remarks seemed necessary regarding them. It is not always easy to ascertain the species to which some particular specimen of Humming-bird belongs, even when the example is present, as all Trochilidists well know, much less when a short and imperfect description of some of the earlier writers is all the light given upon which to form an opinion. It therefore seemed desirable that D'Orbigny's specimens should be critically examined, as being among the most important of the earlier collections made of these difficult birds. Some of the species mentioned by him are not represented among his specimens in the Museum; and in certain instances, where he has referred them to a well-determined species represented by Lesson in one or other of his works on this family, I have retained them under the modern name of such species; but in cases where the indications are either imperfect or do not exist at all, it seems to me that it will be necessary to exclude D'Orbigny's names from the nomenclature of the group, as, access to his specimens failing, there remains no possible way of ascertaining what were the species he intended to describe.

I desire to express my thanks to Prof. A. Milne-Edwards and to Mons. E. Oustalet, Aide-Naturaliste, for the great facilities afforded me in examining the specimens and records relating to them in the Museum under their charge.

The species, in the following remarks, are arranged in the order in which they stand in the 'Synopsis Avium.'

PATAGONA GIGAS.

Trochilus gigas, Vieill. Gal. Ois. pl. 180.

Ornismya gigantea, D'Orb. & Lafr. Syn. Av. ii. p. 26, sp. 1.

Hab. Cochabamba, La Paz, Chuquisaca, Valparaiso.

Several specimens of this species brought by D'Orbigny.

EUPETOMENA MACRURA.

Trochilus macrourus, Gmel. Syst. Nat. p. 487.

Ornismya macrourus, D'Orb. & Lafr. Syn. Av. ii. p. 26, sp. 2.

Hab. Chiquitos, Moxos.

No specimens of this bird in the Museum from D'Orbigny.

COMETES SPARGANURUS.

Trochilus sparganurus, Shaw, Gen. Zool. vol. viii. p. 291, pl. 31.

Ornismya chrysurus, D'Orb. & Lafr. Syn. Av. ii. p. 26, sp. 3.

Hab. Yungas.

Mounted specimens.

COMETES PHAON.

Cometes phaon, Gould, P. Z. S. 1847, p. 31.

Ornismya chrysurus, var., D'Orb. & Lafr. Syn. Av. ii. p. 27, sp. 4.

Hab. La Paz, Sicasica.

Mounted specimens, male and female. This is undoubtedly the bird described aferwards by Gould as *C. phaon,* but which D'Orbigny regarded as only a variety of *C. sparganurus.*

LESBIA NUNA.

Lesbia nuna, Less. Suppl. Ois.-Mouches, p. 169, pl. 35.

Ornismya gouldii, D'Orb. & Lafr. Syn. Av. ii. p. 27, sp. 5.

Hab. Enquisivi and Sicasica.

I place *O. gouldi,* D'Orbigny, as *Lesbia nuna,* Less., from the fact that I was unable to find any specimen of *L. gouldi* brought by D'Orbigny in the Museum; but there are three of *L. nuna,* a male and two females, mounted in the gallery. The measurement given of the lateral rectrices of 5½! I do not understand. If centimetres are intended it is too short even for the tail of a female of *L. gouldi.* If 15½ is intended, it would be about the right length for *L. nuna,* but too long for *L. gouldi.* I am under the impression that as 20⅓ centim. is given as the total length, 15½ centim. was meant for that of the tail, which is the measurement of the tail of *L. nuna.* The male specimen has no locality given on the ticket beyond '*Amérique méridionale;*' but the two females are marked as from Sicasica, Bolivia.

THALURANIA NIGROFASCIATA.

Trochilus nigrofasciata, Gould, P. Z. S. 1846, p. 89.

Ornismya furcata, D'Orb. & Lafr. Syn. Av. ii. p. 27, sp. 6.

Hab. Chiquitos, Santa Cruz, Moxos.

Three skins, two males and one female, brought by D'Orbigny from Yungas, Santa Cruz, and Moxos respectively, numbered on their tickets 324, are in the collection. I could not find any example from Chiquitos. They all belong to *T. nigrofasciata,* Gould.

Eriocnemis glaucopoides.

Ornismya glaucopoides, D'Orb. & Lafr. Syn. Av. ii. p. 27, sp. 7.

Trochilus d'orbignyi, Bourc. & Muls. Ann. Sc. Phys. et Nat. Lyon, 1846, p. 320.

Hab. Valle Grande, Bolivia.

A single specimen from the above locality, belonging to the genus *Eriocnemis,* is the type of *Ornismya glaucopoides* of D'Orbigny. It was afterwards described by Bourcier and Mulsant as *Trochilus d'orbignyi* (*l. c.*), and has been always known to naturalists as *Eriocnemis d'orbignyi.* The name given by MM. Bourcier and Mulsant will now have to become a synonym of the one bestowed upon the species by D'Orbigny, which has priority of eight years! It is a very rare species, the type still remaining unique, no one having met with the bird since it was first discovered.

Chlorostilbon splendidus.

Ornismya aureoventris, D'Orb. & Lafr. Syn. Av. ii. p. 28, sp. 8.

Trochilus splendidus, Vieill. Nouv. Dict. Hist. Nat. tom. vii. p. 361.

Hab. Moxos, Cochabamba, Yungas, and Corrientes.

A single skin of this species from Cochabamba, numbered 297; two mounted specimens from Corrientes and Moxos respectively; and a third with only "Bolivia?" given as the habitat.

Acestrura mulsanti.

Ornismya mulsanti, Bourc. Ann. Sc. Phys. et Nat. Lyon, 1842, p. 344, t. xx.

Ornismya cyanopogon, D'Orb. & Lafr. Syn. Av. ii. p. 28, sp. 9 (nec Lesson).

Hab. Yungas.

A single mounted specimen in the Museum, brought by D'Orbigny from Yungas, is that of an adult male *A. mulsanti.* Four others in skin are those of females and young.

RHODOPIS VESPER.

Ornismya vesper, D'Orb. & Lafr. Syn. Av. ii. p. 28, sp. 10; Less. Ois.-Mouches, pl. 19.

Hab. Tacna, Peru.

No specimen of D'Orbigny's is to be found.

CALLIPERIDIA ANGELÆ.

Ornismya angelæ, Less. Ill. Zool. pls. 45, 46; D'Orb. & Lafr. Syn. Av. ii. p. 28, sp. 11.

Hab. Corrientes.

Two skins of females, numbered on their tickets 154, both from Corrientes.

PETASOPHORA SERRIROSTRIS.

Trochilus serrirostris, Vieill. Nouv. Dict. Hist. Nat. tom. vii. p. 359.

Ornismya petasophora, D'Orb. & Lafr. Syn. Av. ii. p. 28, sp. 12.

Hab. Yungas.

A specimen of *P. serrirostris,* brought by D'Orbigny, is mounted in the gallery of the Paris Museum. This is the only instance, that I am aware of, in which this species has been procured in Bolivia, as it is a Brazilian bird, found commonly between Bahia and Rio Janeiro. It is the only species of *Petasophora* obtained by D'Orbigny.

EUSTEPHANUS FERNANDENSIS.

Trochilus fernandensis, King, Proc. Zool. Soc. 1830, p. 30.

Ornismya fernandensis, D'Orb. & Lafr. Syn. Av. ii. p. 29, sp. 13.

Hab. Juan Fernandez.

A male and female in the collection, from Juan Fernandez.

AGLÆACTES PAMELA.

Ornismya pamela, D'Orb. & Lafr. Syn. Av. ii. p. 29, sp. 14.

Orthorhynchus pamela, D'Orb. Voy. Ois. p. 375, t. lx. f. 1.

Hab. Yungas.

The type mounted, being the only specimen in the collection.

HELIOMASTER LONGIROSTRIS.

Trochilus longirostris, Vieill. Ois. Dor. tom. i. p. 107, pl. 59.

Ornismya longirostris, D'Orb. & Lafr. Syn. Av. ii. p. 29, sp. 15.

Hab. Guarayos.

There is no specimen marked *O. longirostris* of D'Orbigny's in the Museum. As, however, he refers to it *O. superba,* Less. Ois.-Mouches, pl. 2, I have assigned his name to *Heliomaster longirostris.*

EUSTEPHANUS GALERITUS.

Trochilus galeritus, Lath. Ind. Orn. vol. i. p. 304.

Ornismya sephanoides, D'Orb. & Lafr. Syn. Av. ii. p. 29, sp. 16; Less. Ois.-Mouches, pl. 14.

Hab. Valparaiso.

No specimen in the collection from D'Orbigny's voyage.

HYLOCHARIS CYANEA.

Trochilus cyanus, Vieill. Nouv. Dict. d'Hist. Nat. tom. xxiii. p. 426.

Ornismya cyana, D'Orb. & Lafr. Syn. Av. ii. p. 30, sp. 17.

Hab. Guarayos.

A mounted specimen in adult plumage, but without any locality indicated on the ticket. There is also a skin of a young individual from Guarayos.

THAUMATIAS ALBIVENTRIS.

Ornismya albiventris, Less. Ois.-Mouches, p. 209, t. 76; D'Orb. & Lafr. Syn. Av. ii. p. 30, sp. 18.

Hab. Moxos.

A mounted specimen of this species. The habitat, however, is not given upon the stand.

LEUCOCHLORIS ALBICOLLIS.

Trochilus albicollis, Vieill. Nouv. Dict. Hist. Nat. tom. xxiii. p. 426.

Ornismya albicollis, D'Orb. & Lafr. Syn. Av. ii. p. 30, sp. 19; Less. Ois.-Mouches, pl. 63.

Hab. Yungas, Chaluani.

No specimen of D'Orbigny's is in the Museum.

CHLOROSTILBON PRASINA.

Ornismya prasina, Less. Ois.-Mouches, p. 188, pl. 65.
Ornismya mellisuga, D'Orb. & Lafr. Syn. Av. ii. p. 30, sp. 20.
Hab. Yungas, Sicasica, Ayupaya.

A specimen of *C. prasina,* Less., brought by D'Orbigny from Ayupaya, as ascertained by the Museum Catalogue, I believe to be the *O. mellisuga* of the 'Synopsis Avium,' for the following reasons:—The locality of Ayupaya is only given twice among D'Orbigny's examples; and the present specimen is the only Humming-bird brought by him that I have been able to find in the Museum as having come from that place, excepting the *Metallura smaragdinicollis,* about which there cannot be any difficulty. This would seem to point it out as the one intended by him as *O. mellisuga.* In the Museum Catalogue it is called the *Saphir-émeraude,* no Latin name having been employed. The next species of the 'Synopsis' he gives is *O. bicolor*; and he asks if that is not the young of the *Saphir-émeraude,* "Junior avis? *le Saphir-émeraude,*" as though he had in his mind the present species, which he called in the Museum Catalogue by that name. These two circumstances seem to show that we shall not probably go wrong if we place D'Orbigny's *O. mellisuga* as a synonym of *Chlorostilbon prasina* (Less.). Again M. Beauperthuy has placed in the gallery a specimen of *C. prasina* which bears on the ticket the name *O. mellisuga.* This seems to me also an indication that D'Orbigny's name was intended for the same species.

Two specimens of the bird called *Ornismya bicolor* by D'Orbigny are in the Museum, numbered 349 and 385. One of them, a male, is mounted, and has upon the stand *Circe doubledayi* in the handwriting of Bourcier; the other, a skin of a female in very poor condition, is marked on the label 'Yungas,' in D'Orbigny's writing. They are rather small delicately shaped birds, of a species apparently undescribed, belonging to the genus *Thaumatias.* Most certainly they have nothing to do with *Circe doubledayi.* I propose to call the species

THAUMATIAS NEGLECTUS.

Ornismya bicolor, D'Orb. & Lafr. Syn. Av. ii. p. 30, sp. 21.

Hab. Yungas and Moxos, Bolivia.

Male. Top of head, nape, and mantle metallic green; throat and upper part of breast brilliant metallic blue, the white base of the feathers on the throat and breast showing conspicuously amid the blue; but this may be caused by the plumage of the specimen being disarranged. Back, rump, and upper tail-coverts light greenish bronze. Wings purplish. Flanks and lower part of breast shining green. Abdomen whitish. Under tail-coverts pale brown, margined with white. Tail pale greenish bronze; a subterminal black bar, as in many species of *Thaumatias*, is present upon all the feathers excepting the two median ones. Bill very slender and pointed. Maxilla black; mandible flesh-colour. Feet black. Total length 3¼ inches, wing 2, tail 1½, bill ¾.

Female. Head and upper parts, sides of throat, and flanks shining grass-green. Centre of throat and underparts whitish, apparently spotted with metallic light green. Tail like that of the male, tips of lateral feathers whitish. Under tail-coverts whitish. Wing purple. Maxilla broken off, the base black; mandible flesh-colour. Feet black. Length 3¾ inches, wing 2, tail 1¼, bill ¾.

This specimen is in a very poor state, and the colour of some parts is difficult to make out correctly. Some of the tail-feathers are wanting; those that remain resemble the rectrices of the male.

Thaumatias neglectus cannot be confounded with other species of the genus, as it does not resemble any of them.

CHRYSURONIA CHRYSURA.

Ornismya chrysura, Less. Ois.-Mouches, Suppl. p. 107, pl. 4.

Ornismya ruficollis, D'Orb. & Lafr. Syn. Av. ii. p. 30, sp. 22.

Hab. Santa Cruz, San Juan de Chiquitos, Yungas.

I place *O. ruficollis*, D'Orb., as a synonym of *C. chrysura*, from the fact that I find a specimen brought from San Juan by D'Orbigny in the gallery of the Paris Museum, which answers very well to his description. It is the only species to which I can refer *O. ruficollis*.

METALLURA SMARAGDINICOLLIS.

Ornismya smaragdinicollis, D'Orb. & Lafr. Syn. Av. ii. p. 31, sp. 23.

Orthorhynchus smaragdinicollis, D'Orb. Voy. Ois. p. 375, t. lix. f. 2.

Hab. Yanacache, Prov. Yungas; Palca, Prov. Ayupaya.

Represented only by the mounted type, the locality of which is given as Ayupaya.

HELIANGELUS AMETHYSTICOLLIS.

Ornismya amethysticollis, D'Orb. & Lafr. Syn. Av. ii. p. 31, sp. 24.

Orthorhynchus amethysticollis, D'Orb. Voy. Ois. p. 376, t. lx. f. 2.

Hab. Territory of the Yuracares Indians.

Represented by the mounted type.

THAUMASTURA CORÆ.

Ornismya coræ, Less.; D'Orb. & Lafr. Syn. Av. ii. p. 31, sp. 25.

Hab. Lima, Peru.

A poor skin of an immature individual, numbered on the ticket 340.

LAMPORNIS VIOLICAUDA.

Trochilus violicauda, Bodd. Tab. Pl. Enl. D'Aubenton, p. 41. no. 671.

Trochilus mango, D'Orb. & Lafr. Syn. Av. ii. p. 32, sp. 26.

Hab. Moxos, Guarayos.

Represented by several mounted specimens.

PHAETHORNIS SUPERCILIOSUS.

Trochilus superciliosus, Linn. Syst. Nat. tom. i. p. 189; D'Orb. & Lafr. Syn. Av. ii. p. 32, sp. 27; Less. Colib. pl. 5.

Hab. Guarayos.

No specimen of D'Orbigny's is in the collection.

PYGMORNIS PYGMÆUS.

Trochilus pygmæus, Spix, Av. Bras. p. 78, pl. 80. fig. 1.

Trochilus brasiliensis, D'Orb. & Lafr. Syn. Av. ii. p. 32, sp. 28.

Hab. Yuracares, Guarayos.

A mutilated skin, without any tail, but apparently belonging to *P. pygmæus.* The ticket bears the number 376.

Threnetes leucurus.

Trochilus leucurus, Linn. Syst. Nat. i. p. 190; D'Orb. & Lafr. Syn. Av. ii. p. 32, sp. 29.

Hab. Yuracares.

A single specimen of D'Orbigny's is in the Museum.

Polytmus virescens.

Trochilus thaumantias, Linn. Syst. Nat. i. p. 190.

Trochilus viridis, D'Orb. & Lafr. Syn. Av. ii. p. 32, sp. 30.

Hab. Moxos.

An adult specimen, mounted, of this species.

Oreotrochilus estellæ.

Trochilus estella, D'Orb. & Lafr. Syn. Av. ii. p. 32, sp. 31; D'Orb. Voy. Ois. p. 376, t. lxi. f. 1.

Hab. La Paz.

Represented by the type specimen, mounted.

Oreotrochilus adelæ.

Trochilus adela, D'Orb. & Lafr. Syn. Av. ii. p. 33, sp. 32; D'Orb. Voy. Ois. p. 377, pl. lxi. f. 2.

Hab. Chuquisaca.

Represented by the type specimen, mounted.

XI.—*Notes on two Birds from the Fiji Islands.*

By T. Salvadori, C.M.Z.S.

I have lately had the opportunity of examining specimens of two interesting birds, recently described, from the Fiji Islands. They belong to Count Turati's collection.

Two specimens, male and female, are labelled, in Mr. Layard's handwriting, "*Rhipidura albicollis*, Layard, N'Gila, Taviuni, Fiji." This name is to be found in 'The Ibis,' 1876,

p. 149, and in the P. Z. S. 1876, p. 493. Although there is no description nor reference, I suppose that the bird so named is the one previously described with the name of *Rhipidura albogularis,* Layard, P. Z. S. 1875, pp. 29, 434. I do not know if the name of *albigularis* has been changed into that of *albicollis* by mistake or on purpose. Dr. Finsch has already hinted (P. Z. S. 1876, p. 20) that the name of *albigularis* cannot stand, which is quite true, as there is a *Muscylva albogularis,* Less. Zool. du Voy. de Bélang. p. 264 (=*Rhipidura albigula,* Hodgs. in Gray's Zool. Misc. 1844, p. 84). I also wish to point out that neither can the name *Rhipidura albicollis* be used for Layard's species, as Vieillot has described a *Platyrhynchos albicollis* (N. D. xxvii. p. 13), which, according to Dr. Pucheran (Arch. Mus. H. N. vii. p. 358; Hartl. J. f. Orn. 1855, p. 426) is the same as *Rhipidura fuscoventris,* Franklin, a species which must stand as *Rhipidura albicollis* (Vieill.). After all this it is evident that *R. albigularis* or *albicollis,* Layard, must be called by some other name; and I propose that of *Rhipidura layardi,* which I have already attached to the specimens in Count Turati's collection.

The other bird to which I wish to refer is *Lamprolia minor,* which has been mentioned by Mr. Layard (Ibis, 1876, p. 155). After stating that it has been quite lately discovered on Vanua Levu by Mr. Kleinschmidt (who proposed to call it *L. minor*), Mr. Layard says that it "resembles *L. victoriæ,* but is about a third smaller, and the head is entirely covered with the brilliant blue feathers." I have compared one male of this species, procured by Mr. Kleinschmidt on Vanua Levu, with two specimens, male and female, of *L. victoriæ* from Taviuni, obtained by the same collector. Now, on comparison, it does not appear that there is any difference about the head, as the brilliant blue feathers entirely cover the head of the males of both species; but the *L. minor,* besides being much smaller, may be distinguished by the white on the two middle tail-feathers reaching nearly to the tip, while in *L. victoriæ* the white does not go so far towards the tip, so that the black end is more extended. The following are the dimensions of the two species:—

	Length. millim.	Wing. millim.	Tail. millim.	Bill from front. millim.	Tarsus. millim.
Lamprolia minor ……	117	62	41	12	19
Lamprolia victoriæ……	140	83	45*	13	23

Turin, Zoological Museum, Nov. 2nd, 1876.

XII.—*On the Contents of a fourth Box of Birds from Hakodadi, in Northern Japan.* By R. Swinhoe, F.R.S.

I have now to report upon a fourth box of birds received from Mr. T. W. Blakiston, of Hakodadi, North Japan, containing thirty-four specimens, together with additional notes, dated 30th June, 1876. I will continue my numbers, as before, from where I last left off (Ibis, 1876, p. 335). The last number noted was 142; but as no. 135, *Uragus sibiricus*, was wrongly identified, as appears from the present series, we must erase it, and commence by repeating the last number.

142. Circus spilonotus, Kaup.

A male, in immature plumage, marked "Awomori (North Japan), 18th April, 1876, ♂ 21½ × 17."

A female Merlin (*Falco æsalon*), from Yedo, is also sent. Mr. Blakiston speaks of having some Owls, and asks if Whitely was right in giving *Syrnium rufescens*, T. & S., from Hakodadi. Whitely's specimens were without doubt correctly identified.

There is a specimen of *Pipastes agilis*, Sykes, which was procured at Yokohama, and one of *Oreocincla aurea*, from the same locality, with the remark "very common in the market of Yokohama in winter." Mr. Blakiston also asks "Does *Muscicapa gularis* exist as a species, or are birds so called only females (*Cyanoptila cyanomelæna*)?" There is no doubt in my mind that the former name has been applied to the female of the latter species (see P. Z. S. 1871, p. 380).

A Japanese Jay, sent from Yokohama, is *Garrulus japonicus*, Bp. This species does not seem to occur at Hakodadi, where its place appears to be taken by *G. brandti*.

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* Dr. Finsch gives only 38-40 millims. for the length of the tail.

Cyanopolius cyanus (Pall.). A specimen of this bird has come marked "Tokio, Japan (per Mr. Oda) ♂." Tokio = Yeddo; so we must not include this as yet among the birds of Hakodadi. It wants the white tips to the median rectrices.

143. Passer montanus (L.).

March. A male, from Hakodadi. There is also a female of *P. rutilans*; but as it is from Yokohama, we must not include it under a number.

Mr. Blakiston also sends an *Eophona personata*, Schleg., ♂, but from Tokio = Yeddo. The Japanese name for this is marked on a separate slip of paper, "Ikarugra." The bird is blue-black round its bill near the base, as is its smaller congener of China, *E. melanura*. The Japanese agrees with a winter-killed specimen of the same species, procured by Père David at Moupin, but has the tomia of the upper mandible near the base of the bill inflected into a flap on each side over the lower mandible. A specimen of the same bird, which I shot near Pekin, has more white on the abdomen, and a splash of black over the whole bill. It was killed on the 29th September, 1868.

There is a male *Carpodacus roseus*, also from Tokio. This is the bird which I wrongly identified with *Uragus sibiricus*.

A male *Emberiza elegans*, Temm., likewise from Tokio. This has a separate label giving its Japanese name, "Miyama hojivo." A male *Turtur risorius* is also sent from Tokio. I originally guessed this bird to be of this species from Blakiston's description (Ibis, 1876, p. 334).

In a note, Mr. Blakiston writes, "I have among my series of skins of *Alauda japonica* one rather large; but I am uncertain if the species varies." It would be interesting to ascertain if this be our home Skylark. I have *Alauda arvensis* from as low on the China coast as Shanghai, where *A. cantarella* is the prevailing species.

"In answer to your question," he continues, "on *Coturnix japonica*, I find some of my specimens show a little dark patch in the midst of the red on the throat."

144. Scolopax rusticula, L.

April. A male from Hakodadi. This is more banded on the underparts than a specimen (♀, 20th February) I have from Shanghai; but one from Amoy (October) is fully as much so.

He sends from the Yokohama market, procured in January, a *Gallinago solitaria* (Hodgs.), with the note "Another male, $12\frac{3}{8} \times 6$." This is much darker and more distinctly banded than a male I procured at Shanghai on the 26th February, 1873; and at first I was half inclined to admit the Japanese bird as distinct. But I have a second specimen from Shanghai, dated Jan. 3rd, 1874, which comes very close to the Japanese, and seems to show that the two are inseparable.

From Yokohama a male *Rhynchæa bengalensis* (L.) is sent.

145. Numenius phæopus, L.

A Hakodadi male of this Curlew, shot on the 24th May, 1876, with the note of size "$17\frac{1}{8} \times 9$." This seems to be of the typical European form, and shows that all our China birds, even those procured at Shanghai, are of the allied form *N. uropygialis*, Gould.

An immature *Nycticorax griseus* from Yeddo, is included; and Mr. Blakiston notes that he has also an adult male and female; but the locality of the latter not being stated, I do not number the species.

146. Colymbus adamsi, G. R. Gray.

An immature male of this species bears the date January, with the note of measurement, "$29\frac{1}{2} \times 13$." The bill is partly yellow and partly black. It is otherwise undistinguishable from *C. glacialis* at the same stage. Specimens have been received from the North Atlantic with similar bills, and the best authorities are now, I believe, disposed to consider the Great Northern Divers of the Atlantic and Pacific to belong to one species. Blakiston wrongly identifies his specimen with *C. arcticus*, L.

147. Anser albifrons.

This is sent as *A. erythropus*, L. (625 of my "List of the Birds of China," P. Z. S. 1871, p. 416); and a note adds that he has another female "$21\frac{1}{2} \times 14\frac{3}{8}$."

148. Anas boschas, L.

A male, killed in March, from Hakodadi, and a female

(October) from near the same place. My attention is called to the way this species and *Querquedula crecca* get a rusty tinge. This I have also noticed in our Chinese birds.

149. DAFILA ACUTA (L.).

A male and female from Awomori, both procured in April.

150. QUERQUEDULA CRECCA (L.).

A male (April) from Hakodadi. A female (October) from S. Yesso.

151. EUNETTA FORMOSA (Georgi).

A male (April) from Awomori, and a female from Mr. Oda from Yeddo.

152. HARELDA GLACIALIS (L.).

A female (February) from Hakodadi. I never met with this species in China; but it has been shot at the mouth of the Peiho river.

With reference to *Fuligula mariloides*, sent on a former occasion, Mr. Blakiston writes, "If you are certain of the identification of the bird I sent before, then the immature male I have is this species. Otherwise I should have considered it as *F. cristata*, of which I have two unmistakable examples with crests." I was, without doubt, right, having procured the same species before at Ningpo*.

153. BUCEPHALA CLANGULA (L.).

A male and female, both from Hakodadi, the latter killed in November.

154. CLANGULA HISTRIONICA (L.).

A male from Hakodadi (June), and a female from S. Yesso (November). I have never heard of this species being found in China. It never occurred to me.

He also sends an adult female from Hakodadi of *Phalacrocorax pelagicus*, Pall., with no white on the flanks, and only a few points of white on the neck. He sent before the immature of this species; so it has already been numbered (see Ibis, 1874, p. 164).

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* See my paper "On a Scaup Duck found in China," P. Z. S. 1873, p. 411.

XIII.—*Ornithological Notes taken during a Voyage from Ceylon to England.* By A. Whyte.

In Ceylon and, indeed, throughout India and the East generally the migrations of birds are chiefly influenced by the two monsoons, viz. the north-east and the south-west, the former generally prevailing in Ceylon and South India from November to April, and the latter from May to October. Comparatively little, however, has been definitely ascertained as to whence the migratory birds come, and the circumstances which influence their migrations. Detailed facts and data can only be arrived at by recording long-continued systematic observations in different localities. In the mean time individual experience may add something to our knowledge of the subject; and it is with this hope that I now put together these notes, taken on board the S.S. 'Duke of Devonshire' during a recent voyage from Ceylon.

We sailed from Colombo, Ceylon, on the 17th Oct. 1876; and for some days we were constantly accompanied by the more common Terns, Gulls, and other Sea-birds, none of which, however, ventured on board.

On the 20th Oct., when about thirty miles S.E. of Minicoy Island, the most northern of the Maldives, a Swallow flew on board, which proved to be *Hirundo rustica*, L. Being either alarmed or exhausted, it was soon captured. When again liberated it flew off vigorously for the island, on which could be seen a beautiful fringe of graceful cocoanut-palms.

At noon, on the 22nd Oct., a Kestrel (*Falco alaudarius*) alighted on the rigging, and perched on one of the yards for the night. After nightfall it was captured by one of the quartermasters, and was caged as a curiosity. Next day, however, it escaped, and no one observed the direction it took. On the same day a common Paddy-bird, or Heron (*Ardea leucoptera*), visited us. It was quite exhausted and emaciated, and greedily devoured some minced meat. From this circumstance it does not seem likely that this species is capable of catching fish or other food while on wing at sea. When liberated it went off to the south-west.

On the 24th Oct. a Pipit (species doubtful) flew on board, when we were about twenty miles south-east of the island of Socotra. At the same time and place several small Finches came on board; but we could not determine their species.

On the 25th Oct. a Quail (*Coturnix communis,* Bonn.) made its appearance, and remained with us for several days, afterwards taking its departure for the south.

The 26th October was the richest day of feathered visitors we had, when the following arrived, viz.:—a Grey Flycatcher (*Muscicapa*); about a dozen Swallows (*Hirundo*); a small Horned Owl (*Ephialtes*) with yellow iris and a row of distinct dark spots or markings on the wing-coverts, otherwise similar to *E. bakkamœna* of Ceylon (it allowed us to approach quite close to it, but it ultimately flew off to the south); two species of Water-Wagtail; three birds which appeared through a glass to be Rollers or allied birds; an *Artamus*; a bird the size of a small Pigeon, with rather long tail and long straight bill, which alighted on the the top of the mainmast, but could not be identified.

On the morning of the 27th, when between Socotra and the Arabian coast, a Falcon (*Falco peregrinator*?) flew on board, and was secured at night. If we have not mistaken our bird, this is the noble "*Shaheen*" Falcon, so much prized by Indian rajahs for falconry. Being a rare and most interesting bird, we took every care of it, and carried it to England safely, and presented it to the Zoological Society of London. It is now in the Society's Gardens, and appears in the list of additions to the Menagerie under this name (see P. Z. S. 1876, p. 839). It is smaller, more compact, and even more courageous than the true Peregrine. It is a curious circumstance that the first bird of this species described was procured by Sundevall at sea between Sumatra and Ceylon (see Jerdon's 'Birds of India,' p. 26).

On the 28th Oct. a Linnet (species doubtful) flew on board, as we passed up the Gulf of Aden. Great numbers of Seabirds were here seen around the ship and along the Arabian shore. We now entered the Red Sea, when few of the feathered tribes visited us compared with those met with in the Indian Ocean.

On the 29th Oct. a White-headed Noddy (*Anous tenuirostris,* Temm.) alighted on board. Vast shoals of dead locusts were seen floating around the ship; also numbers of porpoises sported around us.

A Wagtail (*M. dukhunensis,* Sykes) paid us a visit on the 30th Oct., and remained with us all the way up the Red Sea and Suez Canal, and left us in the Mediterranean.

On the 31st a Peregrine Falcon, *Falco peregrinus,* was seen flying around the vessel. It ultimately alighted on the mainmast for a short time, and then left us for another vessel at some distance from us*. On this day a very handsome Owl came on board. It was about the size of *Syrnium indranee* of Ceylon, but of a lighter colour. It flew off in a straight line for the African coast; and we were unable to identify it.

We entered the Suez Canal on the morning of the 3rd Nov., and spent about two and a half days in getting through it. The birds which we recognized along the banks and lakes were principally Coots, Vultures (*Neophron*), Moorhens, Rails, Ducks and Teal, Divers, Godwits, Sandpipers, Curlews, various Birds of Prey, Swallows, Pipits, Wagtails, &c. As we neared the Port-Said end of the Canal, myriads of Waders were seen fishing and pluming themselves on the lakes and lagoons. The most conspicuous were Flamingoes and Pelicans; and all on board agreed they had never seen a more imposing army of Waders. During our run up the Mediterranean and the Bay of Biscay no birds visited us. We had evidently got out of the track of migration, or it had ceased for a time. During the entire voyage in the Indian Ocean and Arabian Sea we experienced no stormy weather, the wind, as a rule, blowing steadily from the north-east. In the Red Sea the wind was more variable.

It will be seen from these notes that we met with over twenty species of land-birds in the Indian Ocean and Red Sea, between the 20th and 31st of October; and these we imagine may be fairly put down as only stray birds from a regular and more numerous stream of migrants. The direction that most of these birds came from would indicate they were migrants from the coasts of Arabia and Persia, whatever their destination may have been. One conviction has forced itself on me, viz. the great influence which vessels, more especially large and fast steamers of the present day, may have on the distribution of species of birds. Some of our visitors remained with us for days, and landed on shores most likely out of the line of their migrations; and in one instance a Wagtail (*Motacilla*) remained with us all the way up the Red Sea and Suez Canal, and found a new home on the shores of the Mediterranean.

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* This Peregrine was easily distinguishable from the bird I suppose to be *F. peregrinator*, by its size and flight.

December 12th, 1876.

XIV.—*On the* Salicariæ *of Dr. Severtzoff.*

By HENRY SEEBOHM.

In 'The Ibis' for 1876 (pp. 83 *et seqq.*), Dresser has given us as pretty a little ornithological puzzle as I have seen for a long time in the *Salicariæ* of Severtzoff's 'Fauna of Turkestan.' There are no less than sixteen or eighteen of them named and, more or less, described. The descriptions of two of them, *S. scita* and *S. arundinacea*, are omitted; but fortunately these are supplied in a letter from Dr. Severtzoff to the editor of 'Stray Feathers' (Str. Feath. iii. p. 420). These two articles will, I think, supply sufficient data to unravel the tangle.

Salicaria turdoides (p. 83) may be dismissed at once as *Acrocephalus arundinaceus* (Linn.).

Salicaria arundinacea (p. 83) might be thought naturally to be either *Acrocephalus streperus* or *A. palustris*. I have never had an opportunity of comparing these two birds in the flesh, and cannot distinguish any difference of general colour or of colour of the legs in the skin. I find, however, that *A. palustris* has a more pointed wing. Out of five of this species in Dresser's collection I find that in one the second primary is equal to the third, and in the four others intermediate in length between the third and fourth. On the other hand, out of ten examples in Dresser's and my own collections of *A. streperus*, eight have the second primary equal to the fourth, and in two it is intermediate between the fourth and fifth. Dresser has identified *S. arundinacea* of Severtzoff with *A. streperus*, without, however, giving any description. I therefore take it for granted that the bill is about the size of that bird's (say culmen ·63 to ·7). From 'Stray Feathers' (*loc. cit.* clause 33) I get the additional information that the tail is shorter than the wing, and the second primary equal to the sixth. The wing is too much rounded for either *A. streperus* or *A. palustris*; the bill is too large and the tail too short for *A. agricola*; but all the three items of information we possess point to *Acrocephalus dumetorum* (Blyth), with which species I am accordingly inclined to identify it.

Salicaria brevipennis (p. 83) is certainly not an *Acrocephalus* at all, the first primary being twice as long as the coverts. We must look for this bird amongst the smaller and greyer species of *Hypolais—opaca, pallida, rama,* or *caligata*. To decide to which of these species it belongs we must have the length of the culmen. This is given as 3¾ lines. This is manifestly an impossible measurement. In Blanford's 'Eastern Persia' (ii. p. 192) we find the following measurements of the culmen of the three smaller of these species given—*H. pallida* ·72 to ·68 inch, *H. rama* ·68 to ·57, and *H. caligata* ·55 to ·5. Severtzoff's measurements are undoubtedly those from the point of the bill to the beginning of the feathers. I shall shortly identify, from evidence independent of the length of the culmen, the next species, *S: capistrata*, Sev., with *Acrocephalus agricola* (Jerd.). Severtzoff gives 4 lines as the length of culmen of *S. capistrata*. The true length of culmen of *A. agricola* is ·55. We may therefore construct the following table for translating Severtzoff's length of bill in lines into true length of culmen in decimals of an inch:—3½=·51, 3¾=·53, 4=·55, 4½=·62, 5=·69, which we shall find very useful as we go on. The bill of *S. brevipennis* being 3¾ lines, equal to culmen ·53, there can be little doubt that this bird is *Hypolais caligata* (Licht.).

Salicaria microptera (Stray Feathers, iii. p. 425) is a new name given by Severtzoff to the preceding species to replace *S. brevipennis,* Sev. nec Dohrn, and consequently also sinks into a synonym of *Hypolais caligata* (Licht.). As a further confirmation of this identification, I may say that the length of wings and tail agree, as also the *slightly* rounded tail, and the wing-formula,—second equals seventh, or intermediate between sixth and seventh; whereas in *H. rama* I find that out of five skins in my collection, in two the second primary is between the seventh and eighth, in two equal to the eighth, and in one between the eighth and ninth.

Salicaria capistrata (p. 84) is an *Acrocephalus,* not a *Hypolais,* the first primary being only the length of the wing-coverts. The wing-formula—second primary equals the eighth—disposes at once of *A. streperus* and *A. palustris.* The choice therefore lies between *A. agricola* and *A. dumetorum.* The principal characters of these two birds may be summarized as under:—

A. agricola. Length of wing 2·35 to 2·15, tail about the same. Second primary varying in length from between the sixth and seventh to between the eighth and ninth. Culmen ·56 to ·52.

A. dumetorum (p. 84). Length of wing 2·5 to 2·35, tail 10 per cent. shorter than the wing. Second primary varying in length from between the fifth and sixth to between the seventh and eighth. Culmen ·74 to ·64.

In every particular *S. capistrata* agrees with the former and disagrees with the latter; I therefore without any hesitation identify this bird with *Acrocephalus agricola* (Jerd.), and note that Severtzoff himself (Stray Feathers, iii. p. 425, clause 33) comes to the same conclusion.

Salicaria magnirostris, Lilj. (p. 84). This bird has been correctly identified by Dresser with *Acrocephalus dumetorum* (Blyth). In each of the above-mentioned four particulars it agrees with *A. dumetorum* and disagrees with *A. agricola.*

Salicaria turcomana (p. 84). Judging from the length of the first primary, this bird is also an *Acrocephalus.* The wing-formula—second primary equals the fourth—restricts the choice certainly to *A. streperus* or *A. palustris.* My own experience, as detailed under *S. arundinacea,* would lead one to call this bird *Acrocephalus streperus* (Vieill.).

Salicaria macronyx (p. 84). The length of the first primary decides at once that this bird is an *Acrocephalus.* The wing-formula is intermediate between those of *A. streperus* and *A. dumetorum.* The length of the culmen of *A. streperus* is ·7 to ·63; and by our rule the culmen of this bird is ·62; so that we may decide that it is a small bird of whichever species it belongs to, and that in this respect the balance of evidence is slightly in favour of *A. streperus.* The length of wing of *A. streperus* varies from 2·7 to 2·45. The length of wing of our bird is 2 inches 6 lines, or 2·5, and may be that of nearly the smallest *A. streperus* or the extreme largest *A. dumetorum.* As we have already decided, from the size of the culmen, that to whichever species it belongs it is a small bird of that species, the argument is conclusive in favour of its being *Acrocephalus streperus* (Vieill.).

Salicaria eurhyncha (p. 85). The first primary being shorter than the coverts, there is no doubt about this bird being an *Acrocephalus.* The second primary being between the sixth and seventh restricts the choice to *A. agricola* and *A. dumetorum.* The tail being one tenth shorter than the wing, and the culmen measuring ·69, are both conclusively in favour of its being *Acrocephalus dumetorum* (Blyth), whilst the length of wing, 2·33 to 2·42, is more in favour of that bird than of *A. agricola.*

Salicaria sphenura (p. 86). The length of the first primary decides at once that this is an *Acrocephalus.* The wing-formula —second primary equals the sixth, or is intermediate between the fifth and sixth—agrees with *A. dumetorum,* and disagrees with *A. agricola, A. streperus,* and *A. palustris.* The comparative shortness of the tail puts another black mark against *A. agricola.* The culmen, ·62, puts a third black mark against *A. agricola*; and the length of wing puts a fourth; so that I arrive at the conclusion that this bird is *Acrocephalus dumetorum* (Blyth).

Salicaria gracilis (p. 86). The length of the first primary decides, again, that this bird is an *Acrocephalus.* The fact that the wings and tail are of nearly equal length decides in favour of *Acrocephalus agricola* (Jerd.), and against *A. streperus, A. palustris,* and *A. dumetorum.* The wing-formula agrees with *A. agricola,* and disagrees with *A. streperus* and *A. palustris,* whilst the length of wing and culmen confirms *A. agricola* against the other three.

Salicaria obsoleta (p. 87). This bird, with first primary twice as long as the coverts, must be a *Hypolais.* The bill is said to resemble that of the next species, which is given as 4 lines, or culmen ·55, the dimensions of *Hypolais caligata* (Licht.), which I take it to be. The wing is slightly more pointed than usual.

Salicaria pallida (p. 87) agrees, in length of first primary, wing-formula, length of culmen, wing, and tail, with *Hypolais caligata* (Licht.).

Salicaria tamariceti (p. 88). Mr. Dresser says that the first primary of this bird is "longer than the wing-coverts;" but 'Stray Feathers' fortunately adds "twice as long as the coverts," so that there can be no doubt about this bird being a *Hypolais.* The second primary being equal to the sixth or seventh, and the culmen ·62 to ·69, incline me to identify this species with *Hypolais pallida* (Ehr.). My skins from Smyrna vary in length of culmen from ·64 to ·68 inch, and have the second primary intermediate in length between the sixth and seventh. I am inclined to discriminate the two species as under :—

H. rama. Length of wing 2·35 to 2·53, culmen ·57 to ·68. Second primary between the seventh and ninth.

H. pallida. Length of wing 2·45 to 2·7, culmen ·6 to ·72. Second primary between the fifth and seventh.

Salicaria modesta (p. 88). From the remark in 'The Ibis' that the first primary is *rather* longer than the coverts, qualified by that of 'Stray Feathers' that it is *scarcely* longer than its coverts, we may decide at once that this bird is an *Acrocephalus.* The wing-formula restricts the choice to *A. agricola* and *A. dumetorum.* The remark, "bill small," gives the casting vote in favour of *Acrocephalus agricola* (Jerd.).

Salicaria concolor (p. 88) is identified by its first primary as an *Acrocephalus.* The wing-formula puts *A. streperus* and *A. palustris* altogether out of the question, and casts a doubt upon *A. agricola.* The length of the wing and the comparative shortness of the tail (measurements omitted in 'The Ibis,' but fortunately to be found in 'Stray Feathers') dispose of *A. agricola* altogether, and leave us with the conclusion that this bird is *Acrocephalus dumetorum* (Blyth), with a slightly shorter bill than usual (·55).

Salicaria scita. Dresser is probably right in identifying this bird with *Hypolais caligata* (Licht.). In 'Stray Feathers' (iii. p. 426) we learn that the first primary is twice as long as the coverts, that the second primary equals the sixth, and that the beak is small.

Salicaria scitopsis (p. 88). The first primary being twice as long as the coverts marks this bird as a *Hypolais.* The second primary being between the sixth and seventh, the length of wing 2·25, and the culmen ·51, all point to *Hypolais caligata* (Licht.), though the dimensions are somewhat smaller than usual. The wing is not rounded enough for *Phylloscopus fuscatus* or its allies.

XV.—*Supplementary Notes on the Ornithology of Heligoland.*

By Henry Seebohm.

Two articles have already appeared in 'The Ibis' on the ornithology of the island of Heligoland. The first was in 1862 (p. 58), and consisted of a translation of a letter by Dr. J. H. Blasius which appeared in 'Naumannia' for 1858. The second article was written by Mr. John Cordeaux, and appeared in 'The Ibis' for 1875 (p. 172).

The information contained in these articles was so startling that an apology is scarcely necessary for adding corroborative testimony to their general accuracy, for correcting a few unimportant errors, and for mentioning some still more recent novelties of special interest.

Mr. Gaetke's work on the birds of Heligoland is making fair progress; and he has intrusted to me the task of translating it into English and editing it in this country; so that it is to be hoped that within the next twelve months the full details of his observations made during the last five-and-twenty years in this wonderful little island may be before the public.

The authenticity of the Heligoland skins is beyond all possible question. During the time I spent on the island, from the 23rd Sept. to the 18th Oct., I not only saw enough to convince the most sceptical of the *bona fides* of all concerned, but myself shot or saw in the flesh such a variety of birds, that I could almost agree with my friend Mr. Gaetke when he stated that he would willingly exchange his collections of rare birds shot in Heligoland for those which had passed over the island without being shot. It is probable, however, that the latter bear a much smaller proportion to the former in Heligoland than in any other place.

During my short stay on the island I saw quite a little epitome of the Petchora birds—Grey Plover, Little Stint, Sanderling, Snow-Bunting, Shore-Lark, Blue-throated Warbler, &c. We shot two Aquatic Warblers, a Little Bunting (*Emberiza pusilla*), and had four Richard's Pipits brought to us in the flesh. I watched a *Phylloscopus superciliosus* in Mr. Gaetke's garden for some hours, listened to its call-note, and finally shot it. As we breakfasted one morning (2nd Oct.) we identified a Great Grey Shrike as it flew past the window of our room; and a couple of hours afterwards we bought the bird for four groschen.

The list of Heligoland birds is so varied that many ornithologists have doubted its accuracy. The fact is that Heligoland is the only part of the world of which the ornithology has been exhaustively worked. Every little boy on the island is a born and bred ornithologist. Every unfortunate bird which visits the island has to run the gauntlet of about forty guns, to say nothing of scores of blowpipes and catapults. The flight and note of every bird is familiar to every islander. Each bird has its own local name in the Heligoland language. A new bird is instantly detected. The fisherman steers with a gun by his side; the peasant digs his potatoes with a gun on the turf and a heap of birds on his coat. On an island where there are no cows, and sheep are kept for their milk only, meat is of course very dear, especially as it has to be brought by steamer from Hamburg, one of the dearest cattle-markets on the continent of Europe. Birds therefore naturally form an important article of diet to the Heligolanders. Every bird which appears is whistled within range with marvellous skill. The common birds are eaten, the rare ones are sold to the bird-stuffer or taken to Mr. Gaetke. Many of the Heligolanders are clever shots. Long before sunrise the island is bristling with guns; and after dark the netters are busy at their Throstle-bushes; and at midnight the birds commit suicide against the lighthouse. When we consider that this has been going on for a quarter of a century, and that the results have been carefully chronicled for that length of time, the wonder is not that so many species of birds have occurred on Heligoland, but that so many have hitherto escaped detection. This must be accounted for on the theory that, after all, the appearance of birds on Heligoland is only accidental. Under ordinary circumstances a migratory bird does not require to rest on this island. A few hundred miles to a bird on the wing is a trifle in favourable weather. It is only when overtaken by a squall, or driven out of its course by contrary winds, that a bird seeks refuge here. This is obvious after a few weeks' experience. Certain winds and certain weather fill the island with birds. At other times the island is comparatively empty. Each bird has its time of migration; weather has apparently nothing to do with this date; good weather does not apparently hasten the birds to their breeding-haunts, nor bad weather retard their starting. If the suitable conjunction of circumstances occurs during the season of a certain bird's migration, that bird visits the island. If the season goes by without such conjunction, the bird does not visit the island. The period of its migration is over. The migration of this species has taken place at high altitudes, it may be, or by other routes; and it is in vain to look for it until its next season of migration comes round, when, given the necessary wind and weather, its appearance may be confidently expected.

The period of migration of each species lasts about a month. In spring the males come first, then the females, then last-year birds, and finally the cripples—birds which have lost their toes, birds with half a tail, birds with one mandible abnormally long, or birds with some other defect. Mr. Cordeaux has fallen into an error in saying (Ibis, 1875, p. 174) that this holds good both in spring and autumn; in autumn the order of migration is partially reversed. Astounding as the fact is, it is nevertheless true that in autumn the birds of the year are the first to migrate, birds which, of course, have never migrated before. This may account for the number of species which visit our shores and Heligoland in autumn only. It is not to be wondered at that on their first journey, and without a guide, they should stray somewhat out of the direct course.

By long practice the Heligolanders know when to expect an arrival of birds. The 12th Oct. was a very unfavourable day. There were scarcely half a dozen birds on the island. This unfavourable weather had lasted nearly a week. I used to take a constitutional round the island with my gun twice or thrice a day, spending most of the rest of the time in Mr. Gaetke's studio chatting about his birds, visiting regularly Aeuckens the bird-stuffer, to inquire if any one else had had better luck. On the 11th I shot three Shore-Larks. Aeuckens told me that that was a very good sign, that he had often noticed that a few birds always preceded the favourable weather, and that we might expect a change and plenty of birds soon. The next day the west wind slackened a little. In the afternoon it was a calm. In the evening Mr. Gaetke advised me to go to bed early and be up before sunrise, as birds were expected. Accordingly I turned into bed soon after ten. At half past twelve I was awoke with the news that the migration had already begun. Hastily dressing myself, I at once made for the lighthouse. The night was almost pitch dark, but the town was all astir. In every street men with large lanterns and a sort of angler's landing-net were making for the lighthouse. As I crossed the potatoe-fields birds were continually getting up at my feet. Arrived at the lighthouse, an intensely interesting sight presented itself. The whole of the zone of light within range of the mirrors was alive with birds coming and going. Nothing else was visible in the darkness of the night but the lantern of the lighthouse vignetted in a drifting sea of birds. From the eastern darkness clouds of birds were continually emerging in an uninterrupted stream; a few swerved from their course, fluttered for a moment as if dazzled by the light, and then gradually vanished with the rest in the western gloom. Occasionally a bird wheeled round the lighthouse and then passed on; and occasionally one fluttered against the glass, like a moth against a lamp, tried to perch on the wire netting, and was caught by the lighthouse-man. I should be afraid to hazard a guess as to the hundreds of thousands that must have passed in a couple of hours; but the stray birds that the lighthouse-man succeeded in securing amounted to nearly three hundred. The scene from the balcony of the lighthouse was equally interesting. In every direction birds were flying like a swarm of bees, and every few seconds one flew against the glass. All the birds seemed to be flying up wind; and it was only on the lee side of the light that any birds were caught. They were nearly all Skylarks. In the heap captured was one Redstart and one Reed-Bunting. The air was filled with the warbling cry of the Larks; now and then a Thrush was heard; and once a Heron screamed as it passed by. The night was starless, and the town was invisible; but the island looked like the outskirts of a gas-lighted town, being sprinkled over with brilliant lanterns. Many of the Larks alighted on the ground to rest, and allowed the Heligolanders to pass their nets over them. About 3 o'clock A.M. a heavy thunder-storm came on, with deluges of rain; a few breaks in the clouds revealed the stars; and the migration came to an end, or continued above the range of our vision.

But interesting as field-work was on Heligoland, cabinet-work in Mr. Gaetke's studio was still more so. There is probably no more interesting local collection in the world. Mr.

Gaetke was, of course, delighted to have an opportunity of chatting with Mr. Sharpe and myself about his favourite birds, and of telling the story of the capture of each. For some unaccountable reason the German ornithologists seem to have neglected Heligoland; and Englishmen rarely visit the island. Mr. Gaetke takes a justifiable pride in the artistic way in which his birds are mounted—all the work of his own hands; but he nevertheless allowed us to take the rarer birds out of the cases to measure and describe them, though he sometimes winced when we ruffled the feathers in the process, and chaffed us good naturedly as a couple of ornithological detectives.

The following information may be worth recording in the pages of 'The Ibis':—

The bird mentioned in Mr. Cordeaux's paper in 'The Ibis' for 1875 (p. 179, footnote) as a *Hypolais* with a light band across the wing, is *Phylloscopus nitidus* (Blyth). No *Hypolais* nor *Acrocephalus* has a bar across the wing. The species of *Phylloscopi* with a large and *Hypolais*-like bill, and one or two bars across the wing, form a well-marked group or subgenus, to which Blasius gave the name of *Acanthopneuste*. Of the thirteen species included in this group, the absence of a mesial line upon the crown and the peculiarities of the wing-formula restrict the choice to two—*P. nitidus* and *P. viridanus*. The bright green, approaching verdigris-green, of the upper parts, and the delicate lemon-yellow of the underparts, decide the point in favour of the former species. We had Indian skins of both species with us for comparison; and Gaetke, Sharpe, and I all agreed that no doubt whatever remains on the question.

Phylloscopus borealis (Blas.), Ibis, 1875, p. 179, erroneously called *Phyllopneuste javanica* (Horsf.), Ibis, 1862, p. 66, is a well-marked and perfectly undoubted specimen. This species has been found recently by Collett in the breeding-season in the Porsanger fjord, slightly to the east of the North Cape*, and ought, one would think, to occur much more frequently upon Heligoland than it does.

Mr. Gaetke's work will contain particulars of about five-and-twenty specimens of *Phylloscopus superciliosus* (Gm.) which have been shot on the island. It will also contain irrefutable evidence that *Phylloscopus proregulus* (Pallas) and *P. coronatus* (Temm.) have likewise been shot on the island.

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* See P. Z. S. Feb. 6, 1877.

Iduna salicaria, Pall. (Ibis, 1862, p. 66), or *Lusciola caligata* of Cordeaux (Ibis, 1875, p. 179). Blasius is correct in his identification, as the following particulars respecting this specimen will prove:—*Hypolais caligata* (Licht.) ♂, 28th Sept., 1851. Wing 2·35, tail 1·8, culmen ·53, bastard primary ·68. Second primary between the fifth and sixth. Two outside and two centre tail-feathers about ·1 shorter than the longest.

The second specimen mentioned by Mr. Cordeaux (*loc. cit.*) is *Acrocephalus agricola* (Jerdon) ♀, 12th Jan., 1864. Wing 2·05, tail 2, culmen ·5, bastard primary ·4 (very small and pointed, scarcely projecting beyond the outer wing-coverts). Second primary equal to the sixth. Centre tail-feathers longest, the two outside ones being ·35 shorter.

The *Saxicolæ* appear to have been somewhat hastily examined, both by Blasius and Cordeaux. *Saxicola aurita* auctorum (*S. rufescens* (Briss.) of Blasius in Ibis, 1862, p. 70, and *S. albicollis* (Vieill.) of Cordeaux in Ibis, 1875, p. 179) is represented by a male in breeding-plumage, shot 12th May 1860, and a male in autumn plumage, shot 26th Oct. 1851.

Saxicola stapazina, Linn., of Blasius, in Ibis, 1862, p. 70, and *Saxicola stapazina*, Linnæus, of Cordeaux, in Ibis, 1875, p. 179, by which both writers, no doubt, meant *Saxicola stapazina* auctorum, nec Dresser, is not represented in the collection. The two specimens mentioned by Cordeaux are, no doubt, two specimens of *Saxicola deserti*, Rüpp., a male with black throat, in autumn plumage, shot 26th Oct. 1856, and a female without the black throat, also in autumn plumage, shot 4th Oct. 1855. In both these specimens the axillaries are white, with concealed dusky bases, and the black at the end of the tail extends for nearly an inch and a half.

Saxicola leucomela (Pallas) of Cordeaux, Ibis, 1875, p. 179, is a fine male, in full breeding-plumage, of *Saxicola mo-*

rio, Ehr. When the wing is expanded it shows no trace of white.

The example of *Acrocephalus certhiola* (Pallas) agrees exactly with specimens in Lord Tweeddale's collection, except that the under surface is somewhat more streaked, probably a sign of immaturity.

Since Mr. Cordeaux's paper was written a very interesting bird has been added to Gaetke's collection, shot on 22nd June 1875. It is a Goatsucker, exactly identical with Severtzoff's type of *Caprimulgus arenicolor* (Ibis, 1875, p. 491). In the British Museum is a skin from Egypt agreeing both with Severtzoff's and Gaetke's birds in length of wing and proportion of primaries. In Capt. Shelley's collection are skins of *Caprimulgus ægyptius,* Licht. (of which *C. isabellinus,* Temm., is a synonym), considerably smaller than the above-named birds, and slightly varying in the proportion of primaries; but there are also intermediate forms, leading to the inevitable conclusion that *C. ægyptius, C. isabellinus,* and *C. arenicolor* are synonyms of one species.

Motacilla vidua, Sundevall, of Cordeaux, Ibis, 1875, p. 180, is incorrectly named. The bird shot 18th May 1866, is an undoubted *M. lugubris.*

Ruticilla mesoleuca (Hempr. et Ehr.). There is a fine male of this bird, shot 12th June 1864, in the collection.

Among the examples of *Lanius excubitor* in Gaetke's studio are two birds which differ from that species in having only one instead of two bars on the wing. The basal portion of the primaries is white; but the secondaries are black or dark brown throughout, except that at the apex they are more or less tipped with white. One bird has no trace of cross-barring on the underparts; but the other bird is slightly barred. These birds appear to agree exactly with Pallas's description of *Lanius major.* In Dresser's collection and in the British Museum are similar skins collected by Robson near Constantinople. Whether this form be really a distinct species I do not pretend to decide. It appears to be intermediate between *L. excubitor* and the American *L. borealis.*

The Red-tailed Shrike, identified by Blasius as *Lanius* *phœnicurus*, Pallas (Ibis, 1862, p. 66), appears to belong to an allied species. Lord Tweeddale, in his article on the Rufous-tailed Shrikes (Ibis, 1867, p. 218), suggests that a description of this bird should be published. I give it as follows:—

Length of wing 3·56 inches, tail 2·94, tarsus ·85. The general colour of the upper parts is greyish brown, slightly mottled on the crown of the head, fore neck, the hinder cheeks, and the rump, caused by brown edgings to the feathers, possibly the remains of young plumage. An ill-defined pale line over the eye. All the wing-feathers more or less margined with paler. The primaries conspicuously tipped with paler. The third primary in one wing newly moulted, and showing the white spot at the base. Tail pale rufous. Underparts whitish. Some of the wing-coverts tipped with rufous, all with a narrow subterminal line of brown. The second primary is ·08 shorter than the sixth. The tail is even, except that the two outside feathers are ·4 shorter than the rest.

After hearing the result of Mr. Gaetke's examination of the rufous-tailed Shrikes in the Berlin Museum, and looking over the skins in the British Museum and in Dresser's collection, and collating the information given in 'The Ibis,' 1867, p. 224 (Walden), 'Stray Feathers,' 1873, p. 174 (Hume), 'Eastern Persia,' ii. p. 140 (Blanford), and 'Ibis,' 1876, p. 187 (Severtzoff), I submit that the Heligoland bird is *Lanius isabellinus*, Hempr. & Ehr. (1828) = *L. arenarius*, Blyth (1846), = *L. phœnicuroides*, Sev. (1876).

The specimens of *Turdus varius* (White's Thrush) are in such perfect plumage, and so artistically mounted, that, in spite of the commandment, it makes one quite covetous to look at them.

The example of *Turdus ruficollis* agrees exactly in measurements with skins of that species from Lake Baical in Dresser's collection. It is an immature bird. The tail is olive-brown, with a rufous cast, especially on the outermost feathers. The shafts of all the tail-feathers are reddish. The under wing-coverts and axillaries are light orange buff.

The skin of *Turdus swainsoni* is somewhat less yellow on the throat than the skins of this species in Dresser's collection, which he kindly allowed me to take to Heligoland for comparison; otherwise it agrees exactly.

Amongst the immature specimens of *Carpodacus* Mr. Sharpe identified both *C. roseus* and *C. erythrinus*.

Of the American species in the collection the two examples of *Anthus ludovicianus* agree exactly with American skins. The specimen of *Dendrœca virens* is in very perfect plumage, and does not show any signs of having been in captivity. A specimen of the American Rice-Bunting (*Dolichonyx oryzivorus*) was also shot on the island; but the wings and tail are so much broken that there is every probability of its having escaped from a cage.

There is one example of *Charadrius virginicus*, and three of *Charadrius longipes*, in the collection. The two species seem to be very distinct. In both the axillaries are ashy grey. In *C. longipes* the wing measures 6·2 inches, the tail 2·4, the tarsus 1·7, end of secondaries to end of wing ·44; the secondaries reach within ·12 of the end of the third primary; and the first and second primaries are of equal length. In *C. virginicus* the wing measures 7·6, the tail 2·7, the tarsus 1·8, end of secondaries to end of wing 1·85; the secondaries reach to the end of the fifth primary; and the first primary is ·3 longer than the second.

Of the two specimens of *Eudromias asiaticus* one is adult and the other young. In both birds the axillaries are pure white.

There are several other birds which there is every reason to believe have been seen on Heligoland—for example, *Emberiza luteola*, *Parus kamschatkensis*, *Phylloscopus fuscatus*, *Phylloscopus tristis*, &c.

The records of the appearance of these birds will find a fitting place in Mr. Gaetke's book. The evidence of a marine artist, trained to catch a fleeting effect of form and colour and fix it in his memory, to be transferred to canvas, is of an entirely different rank to that of the ordinary sportsman or collector; but in an article for a severely scientific journal it will be wisest to content ourselves with quoting the witticism of the "Old Bushman":—*What is hit is history*; *what is missed is mystery*.

XVI.—*Notes on the Birds of the Province of Buenos Ayres.*

By Henry Durnford.

(Plate III.)

Before commencing these notes, I feel that some apology is due to the readers of 'The Ibis' for several mistakes which appeared in my last communication on the birds of this district (Ibis, 1876, p. 157 *et seqq.*), and which I will endeavour to correct in the course of the following remarks. In justice to myself I must add that the above-mentioned communication was not written with a view to its being published in 'The Ibis;' for a short residence in a new country had not enabled me to speak so confidently as I should have liked.

Baradero, which I shall have occasion to mention frequently, is a small town about fifty-three miles further north than the city of Buenos Ayres, from which it is distant nearly ninety miles in a straight line in a W.N.W. direction. It is situated on an arm, or "riacho," of the Parana; but as this arm joins the main river at both ends, it is in reality a portion of the Parana itself.

[Mr. Durnford's nomenclature has been slightly altered to correspond with that of our 'Nomenclator Avium Neotropicalium.' The best general account of the ornithology of La Plata is that given in the second volume of Burmeister's 'Reise in die La Plata-Staaten' (2 vols, Halle, 1851). In the P. Z. S. 1868, p. 138, and 1869, pp. 157, 631, will be found three articles on Mr. Hudson's valuable collections made near Buenos Ayres, to which references are given below. A new revision of the birds of La Plata, with such short characters added as would enable observers in that country to determine the species, would be a very valuable contribution to our science.—Edd.]

1. Turdus leucomelas (Vieill.); Scl. et Salv. P. Z. S. 1868, p. 138.

Resident. In the winter to a certain extent gregarious, and common always in the belt of trees and scrub which fringe the shore of the La Plata, preferring low land to a more elevated district. There is a fact about the note of this bird that I am anxious to record. Every one in England is familiar with the subdued but querulous chuckle of the Blackbird, which it almost invariably utters before leaving the friendly shelter of a thick bush. Now, though *Turdus leucomelas* has scarcely any song, certainly nothing that can be compared to that of a Blackbird, it has exactly this same peculiar note, and utters it under precisely the same conditions as the Blackbird; and so much did this coincidence strike me, that I thought when I first heard the sound that an escaped Blackbird was the author of it. I look upon this as one of the many isolated facts which seem to prove descent from a common progenitor. Common at Baradero in April.

2. TURDUS RUFIVENTRIS, Vieill.; Scl. et Salv. P. Z. S. 1868, p. 138.

Resident, but never observed in parties like the foregoing species. One shot on the 25th May had in its stomach remains of Coleoptera. Common at Baradero in April.

3. MIMUS CALANDRIA (Lafr. et D'Orb.); Scl. et Salv. P. Z. S. 1868, p. 139.

A few individuals remain with us all the winter; but the greater part are spring and summer visitors. Though it is the only bird here that can boast of really having a song, its vocal powers are chiefly exercised in imitating the notes of other birds, in which it shows great proficiency. Common at Baradero in April.

4. POLIOPTILA DUMICOLA (Vieill.); Scl. et Salv. P. Z. S. 1868, p. 139.

Observed throughout the year, but not by any means a common bird. I found it plentiful at Baradero in April, frequenting thickets and low scrub, preferring wet marshy spots. Its food consists of small insects. Iris dark wood-brown. Legs, feet, and claws black.

5. TROGLODYTES FURVUS (Gm.); Scl. et Salv. P. Z. S. 1869, p. 158.

Resident and abundant everywhere. I stated in my last note that this bird lays five eggs. I should have said seven or eight. Common at Baradero in April.

6. Cistothorus platensis (Lath.); Scl. et Salv. P. Z. S. 1869, p. 158.

On the 26th of April last I found several of these birds near Lujan bridge amongst the thick tufts of "Paja" grass, which there grows in about a foot of water. These it is very unwilling to leave, and, when flushed, only flies a few yards, being very anxious to seek the shelter of another tuft. On alighting it clings to a stout blade of grass, thence creeping, mouse-like, into the thickest part. In its mode of flight it resembles *Troglodytes furvus,* but frequents damper places than that bird. In the same marsh where I found it I shot *Synallaxis maluroides* and *S. sulphurifera.* Its food consists of small insects chiefly Coleoptera. Legs, feet, and claws light brown tinged with slate-colour, undersides lightest. Iris wood-brown.

7. Anthus correndera (Vieill.); Scl. et Salv. P. Z. S. 1868, p. 139.

Resident, found everywhere, and very common. Abundant up the Parana to Baradero.

8. Parula pitiayumi (Vieill.); Scl. et Salv. P. Z. S. 1869, p. 631.

I have nothing to add to my former note (Ibis, 1876, p. 158). The only specimen I have ever seen was one I killed on the 29th October 1875. Decidedly rare here.

9. Progne purpurea (Linn.); Scl. P. Z. S. 1872, p. 605.

The dates of arrival and departure of this bird are about the same as those of *P. tapera.* The young are on the wing early in February. Common both in the town and country, breeding freely in chinks in walls, under the eaves of houses, and holes in trees. Preeminently a homely bird. During the summer its loud harsh notes, uttered whilst on the wing, may be constantly heard; but when resting on a telegraph-wire or twig of a tree it has quite a pretty little song.

10. Progne tapera (Linn.); Scl. P. Z. S. 1872, p. 606.

Arrives in September, leaving about the first week in April. It is a noisy, garrulous bird, and has a peculiar habit of raising its wings over its back in the midst of its aerial evolutions, and then dropping some distance through the air before taking flight again. In the summer these birds congregate in large parties, and seem never tired of circling about the topmost branches of some wide-spreading ombo-tree, which is their favourite resort.

11. Petrochelidon pyrrhonota (Vieill.); Scl. et Salv. Nomencl. p. 14.

The only occasion on which I have seen this bird was on the 25th of March of the present year, when I observed about half a dozen at different times during the day, all flying steadily in a north-easterly direction. This was about thirty miles to the west of Buenos Ayres. From their manner of flight, always keeping in the same general course, though occasionally turning aside to chase some insect, I have no doubt they were migrating: they kept about ten feet from the ground. At a distance they are not easy to distinguish from *Hirundo leucorrhoa*; but on a nearer approach their greater size and chocolate throat, but more especially their reddish-brown rumps, are clearly discernible. The museum possesses one specimen, killed in this neighbourhood.

12. Hirundo leucorrhoa, Vieill.; Scl. et Salv. P. Z. S. 1868, p. 139.

Arrives early (I saw some on the 10th August last year), and does not leave us till the middle of April. I speak of the main body; for many birds remain with us all the winter. On the 30th July I saw two or three hundred of them in the course of a long walk a little to the north of Buenos Ayres. It was quite warm and very fine, not at all like winter.

This is the most common species of Swallow we have, and there is scarcely a rancho in the country that has not its one or two pairs breeding under the eaves or in the cracks of the walls. It also resorts to holes in trees for nesting-purposes. Though during cold and dull weather in the winter none are visible sometimes for weeks together, a warm bright day never fails to attract some from their temporary shelter, wherever that may be. Pretty common at Baradero in April.

13. ATTICORA CYANOLEUCA (Vieill.); Scl. et Salv. P. Z. S. 1869, p. 159.

Arrives at the end of September, and generally leaves in March; but this year I observed two, a little north of Buenos Ayres, on the 30th of April. This, the smallest species of Hirundinidæ, always reminds me of the Sand-Martin at home. In its habit of flying close to the ground and frequenting the neighbourhood of pools and streams, from which it never wanders far, it is essentially like that bird. It nests in holes in the banks of arroyos, sandpits, and similar localities.

14. STEPHANOPHORUS LEUCOCEPHALUS (Vieill.); Scl. et Salv. P. Z. S. 1869, p. 161.

Common in winter in flocks, frequenting bushes and low trees; but I have not observed it to the south of Buenos Ayres. Its food consists of buds and young shoots. From its handsome crimson crest-feathers, and delicate grey and pale blue plumage which flanks these, it is one of the most beautiful birds we have. Iris wood-brown; beak blue-black, under mandible slightly the lightest; legs and feet brown-black.

15. TANAGRA STRIATA (Gm.); Scl. et Salv. P. Z. S. 1868, p. 139.

I have only observed this Tanager here two or three times. In February I shot a young bird at Punta Lara, which must have been bred there; and in June and July last I saw several birds, both males and females, about thirty miles to the north of Buenos Ayres. They seem fond of low damp ground where there are plenty of reeds.

16. GUIRACA GLAUCOCÆRULEA (Lafr. et D'Orb.); Scl. et Salv. P. Z. S. 1868, p. 139.

A summer visitor, but rare. I have only seen it once, when I met with it in the riverain wood at Punta Lara.

17. SPERMOPHILA ORNATA (Licht.); Scl. et Salv. P. Z. S. 1869, p. 632.

A spring and summer visitor, arriving about the end of October and leaving again towards the end of April; during this time it is common everywhere. I have seen the young on the wing by the middle of December; and as I have also taken its eggs in January, I have no doubt it has two broods in the season. The nest is a very thin and flimsy structure of roots, usually placed in a bush four or five feet from the ground. The young in their first plumage resemble the adult female.

18. Paroaria cucullata (Lath.); Scl. et Salv. Nomencl. p. 30*.

I scarcely think this ought to be included in my list, as all the specimens I have seen here have probably been birds escaped from cages. I found it in April very common up the Parana at Baradero, where it frequented thickets and trees.

19. Donacospiza albifrons (Vieill.); Scl. et Salv. P. Z. S. 1869, p. 161.

Not nearly so common as the next species, and very different in its habits. I am not sure whether it breeds here, having only observed it in the winter. In the marshes, where tall reeds and young willow shoots abound, this bird may be seen clinging to the highest sprig it can find, or searching diligently for insects. Its long tail renders it easily distinguishable; and in this, its erratic flight, and quick movements it closely resembles the *Synallaxinæ*, and, indeed, is generally found in the same places as some members of that group. Its food consists principally of minute Coleoptera. Iris wood-brown; beak black; legs and feet pale horn-colour.

20. Poospiza nigrorufa (Lafr. et D'Orb.); Scl. et Salv. P. Z. S. 1868, p. 140.

Resident and common in reed-beds and thickets in damp marshy ground. Common at Baradero in April. Its bright-red colouring and sprightly actions make it one of the most conspicuous birds we have. The young in their first plumage somewhat resemble the adult female, being dark dusky brown above, beneath dusky brown and yellowish white in longitudinal streaks. Generally seen in pairs in the winter. Beak black; legs and feet dark yellowish brown.

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* [A skin of this bird, obtained by Mr. Hudson at Conchitas in 1868, is in Sclater's collection, but it seems to have been omitted from our lists.—Edd.]

21. ZONOTRICHIA PILEATA (Bodd.); Scl. et Salv. P. Z. S. 1868, p. 139.

Occurs abundantly everywhere, both in town and country. Very common at Baradero in April. I stated in my last communication that four eggs was the number usually laid; I should have said five.

22. EMBERNAGRA PLATENSIS (Gm.); Scl. et Salv. P. Z. S. 1868, p. 140.

Resident and common here and up the Parana to Baradero. Its favourite resort is thick reed-beds. Its flight is laboured, and its tail so long that it droops, giving one the idea of being too heavy for it. A few at Baradero in April.

23. CHRYSOMITRIS BARBATA (Mol.); Scl. et Salv. P. Z. S. 1868, p. 140.

Observed from the beginning of September to the end of May. They are generally seen in flocks, and in the neighbourhood of trees or low scrub. They have a habit of hanging, Tit-like, from a twig. Their food consists of small seeds, and, judging from their fondness for the large thistle, chiefly of the seed of that plant.

24. SYCALIS LUTEOLA (Sparrm.); Scl. Ibis, 1872, p. 44.

Resident and generally distributed, usually living on the ground, and in the winter going in enormous flocks; on these occasions, when they all rise at once, the noise of their wings is like the rustling breeze. The flocks are composed of both sexes, and move in a northerly direction during the cold weather, though they never entirely leave us. The female is less brightly attired than the male; and the young at first resemble the female. The males are much valued as songsters.

25. SYCALIS PELZELNI, Sclater, Ibis, 1872, p. 42.

Resident. This bird is readily distinguishable from the last mentioned by its superior size; and the males can always be identified by their bright orange foreheads; the females are of a more sombre plumage. Like *S. luteola,* many move in a northerly direction in winter, at which season both sexes congregate in enormous flocks. On the 17th April of this year I witnessed a vast migratory body of this species whilst steaming down the riacho of Baradero. The flight continued for upwards of an hour, crossing the river from south to north; and during that time it was not possible to look in any direction without seeing hundreds of birds. They are a more tree-loving species than *S. luteola,* and, sometimes at least, parasitical in their breeding-habits. On the 17th October I took a nest with one egg from a nest of *Furnarius rufus,* which the Finch had relined for its own use, and shot the old male bird whilst standing in the doorway of its appropriated home. A friend of mine has taken the eggs from a nest of *Synallaxis.* An adult male shot on the 6th of April is—total length 5·3 inches, beak 3, tarsus 6. Forehead bright orange. Head above, neck above and on sides greenish yellow, centre of feathers darkest. Throat and neck below chest, stomach, and under tail-coverts bright canary-yellow. Back dark greenish yellow, centre of feathers nearly black. Upper tail-coverts yellowish green. Primaries dark brown, all but the first slightly edged with pale yellow; first and third of equal length, second rather the longest. The outer webs of the second, third, fourth, and fifth become narrower towards their extremities. Under wing-coverts canary-yellow. Tail twelve feathers, nearly black, edged with yellow.

An adult female, shot on the same day, is slightly smaller than the male. Head, neck, and back dull brown, centre of feathers darkest. Upper tail-coverts dark greenish brown. Throat dirty white, with a tinge of yellow at the corner of base of lower mandible. Chest light brown, with a tinge of dull white. Stomach dull white, towards the sides light brown. Flanks light brown. Under tail-coverts dirty white, base of feathers with a tinge of yellow. Primaries dark brown, slightly edged with pale yellow, chiefly on the inner webs; the basal half of the inner webs of these feathers is pale primrose-yellow. Greater wing-coverts dark brown, very slightly edged with pale yellow; lesser wing-coverts greenish yellow, with a tinge of grey. Under wing-coverts pale canary-yellow.

The young in their first plumage somewhat resemble the adult female, but have less yellow about them.

26. Molothrus rufoaxillaris, Cassin; Scl. et Salv. P. Z. S. 1868, p. 140.

Though I have never had the good fortune to obtain this bird, I have twice been able to identify it, in October and again in May. It resembles *M. bonariensis* at a little distance; but the red patch on the elbow, when it is near enough to be seen, affords a ready means of distinguishing the two species.

27. Molothrus bonariensis (Gm.); Scl. et Salv. P. Z. S. 1868, p. 140.

Mr. Hudson's researches on the genus which includes this bird are very exhaustive (P. Z. S. 1870, p. 671, 1874, p. 153); and my limited experience agrees with his accounts. I strongly recommend any one who takes any interest in the instincts of birds to read Mr. Hudson's papers. *M. bonariensis* is a very common and generally distributed species, in the winter going in large flocks.

28. Molothrus badius (Vieill.); Scl. et Salv. P. Z. S. 1868, p. 140.

Resident but not so numerous as the last species, and generally seen in small flocks.

29. Agelæus thilius (Mol.); Scl. et Salv. P. Z. S. 1869, p. 159.

Resident and common throughout the province, flocking in large numbers in the autumn and winter. It frequents open country, preferring that which is low and swampy. Common at Baradero in April.

30. Amblyramphus holosericeus (Scop.); Scl. et Salv. P. Z. S. 1869, p. 161.

Resident and common in reed-beds and marshes, but more numerous in the summer than winter. It has a loud clear whistling note, and feeds on aquatic plants. I found it common at Baradero in April.

31. PSEUDOLEISTES VIRESCENS (Vieill.); Scl. et Salv. P.Z.S. 1868, p. 140.

I have only observed this bird here in April; but it probably remains all the year a little to the north of the city. It goes in flocks, and frequents bushes on low damp land. Pretty common at Baradero in April.

32. LEISTES SUPERCILIARIS, Bp.; Scl. et Salv. P.Z.S. 1868, p. 140.

Resident and common both here and up the Parana. It frequents low marshy land, in the winter congregating in flocks of considerable size. It has a curious habit of rising almost perpendicularly in the air to chase some passing insect, and dropping again as suddenly to the thistle or tuft of grass on which it had been perching. The young in their first plumage differ entirely from adult birds. The former are light and dark brown above, instead of dull black as in the adult, and lack all signs of the brilliant scarlet of the throat and breast; they show, however, a faint trace of pink on the elbows, and have the white transocular line as in the adult. A few seen at Baradero in April.

33. STURNELLA DEFILIPPII, Bp.; Scl. et Salv. P.Z.S. 1869, p. 161.

Very common and generally distributed. In the winter they congregate in enormous flocks.

34. MYIOTHERETES RUFIVENTRIS (Vieill.); Scl. et Salv. P.Z.S. 1868, p. 141.

A winter visitor, but rare. On the 25th of March I saw a single bird at Moreno, and on the 25th of May I shot a specimen at Punta Lara. In the air its long, pointed, almost Plover-like wing, and on the ground its bold upright position, are sufficient to establish its identity. Its habits seem generally like those of the other *Tænopteræ*; and it is always in a restless state, flitting from a clod of earth to the top of a thistle, or making a sudden dart at some passing insect. The stomach of the one I shot contained a large hairy caterpillar and some remains of Coleoptera. Beak, legs, feet, and claws black. Iris wood-brown.

35. Tæniopteera coronata (Vieill.); Scl. et Salv. P. Z. S. 1868, p. 141.

Common in April at Baradero, and seen here in May and June. In its habits and food it resembles the other *Tæniopteræ*, and seems fond of going in small flocks. Beak, legs, and feet black; iris wood-brown.

36. Tæniopteera dominicana (Vieill.); Scl. et Salv. P. Z. S. 1869, p. 633.

Resident, I believe, but rare. It is generally found in flocks; and I have only observed it twice, on the 25th May and 30th July. It, like other *Tæniopteræ*, is a restless bird, always fly-catching or playing. Individuals vary much in plumage, from grey to white on the back and underparts. Their food consists of larvæ and Coleoptera. Beak, legs, and feet black. Iris wood-brown.

37. Sisopygis icterophrys (Vieill.); Scl. et Salv. P. Z. S. 1868, p. 141.

Not uncommon from October to the end of February. I also met with a few examples about the 10th of August.

38. Lichenops perspicillatus (Gm.); Scl. et Salv. P. Z. S. 1868, p. 141.

Though I have no doubt about the specific identity of the black- and red-plumaged birds, there are one or two points which seem to favour the view of their being distinct. The black-plumaged birds in the summer are decidedly more numerous than the red-plumaged ones; and in winter the proportion is at least eight to one. I can only suppose that there is a partial migration of the females. I have several times flushed the red-plumaged bird from the nest, but the black bird never.

♂. Beak pale primrose-yellow, inside of mouth paler. Iris and naked skin round the eye primrose-yellow, but the skin round the eye paler in the female than the male. Legs, feet, and claws in both sexes black.

♀. Upper mandible dark horn-colour between the nostrils, and from there to the corner of the mouth dull primrose-yellow. Under mandible, tip horn-colour, fading into primrose-yellow towards the base. Inside of mouth very pale horn-colour, with a tinge of yellow under the tongue. This species is common at Baradero in April, but only black-plumaged birds are seen.

39. MACHETORNIS RIXOSA (Vieill.); Scl. et Salv. P. Z. S. 1868, p. 143.

Spring visitor, arriving in August; but it does not seem to be a common bird.

40. CENTRITES NIGER (Bodd.); Scl. et Salv. P. Z. S. 1868, p. 142.

Autumn and winter visitor, and common on open campland. Common at Baradero in April.

41. HAPALOCERCUS FLAVIVENTRIS (Lafr. et D'Orb.); Scl. et Salv. P. Z. S. 1869, p. 160.

Having only observed this bird from October to April, I suppose it is a summer visitor. Between these months it is common in the riverain wood and in low damp places where the reeds afford any cover. Plentiful at Baradero in April.

42. SERPOPHAGA SUBCRISTATA (Vieill.); Scl. et Salv. P. Z. S. 1868, p. 142.

Resident and abundant everywhere. Common at Baradero in April.

43. SERPOPHAGA NIGRICANS (Vieill.); Scl. et Salv. P. Z. S. 1868, p. 142.

Resident, but not so common as the last-named species. I have always found this bird amongst the bushes and thick growth of sauce- and ceiba trees near the river.

44. CYANOTIS AZARÆ (Licht.); Scl. et Salv. P. Z. S. 1869, p. 159.

Resident and common in reed-beds, generally found where there is a foot or so of water. It has a low piping note, which it constantly utters whilst busily hunting over the reeds for insects. Common at Baradero in April.

45. Myiodynastes solitarius (Vieill.); Scl. et Salv. Nom. p. 50.

A summer visitor, but not common. Shot in November at Punta Lara, and seen in February near Belgrano.

46. Pitangus bellicosus (Vieill.); Scl. et Salv. P. Z. S. 1868, p. 142.

The familiar cry of "Bien te veo" may be heard all the year round, but most commonly in the spring and summer, when the birds are engaged with their nests or young. It is an early breeder. I have found fresh eggs in the middle of October; and it probably has two broods in the year. It makes a large domed nest of twigs, wool, hair, and thistledown, lining it thickly with feathers. Plentiful in April at Baradero.

47. Pyrocephalus rubineus (Bodd.); Scl. et Salv. P. Z. S. 1868, p. 142.

"Chirinchi." An early spring visitor, arriving in September, leaving in April, and during their stay here very numerous. The young are on the wing by the middle of January, and in their first plumage resemble somewhat the adult female, having scarcely a trace of red beneath. The old birds leave us at the beginning of February, the young remaining till the middle of April. Two observed near Baradero in April.

48. Tyrannus melancholicus, Vieill.; Scl. et Salv. *l. s. c.*

Spring and summer visitor, arriving in November and leaving in April.

49. Milvulus tyrannus (Linn.); Scl. et Salv. Nomencl. p. 53.

Arrives in October and leaves early in April. The nest is strongly made of grass and reeds, lined with roots, and is placed in the fork of a low tree: though it has no mud about it, it is always quite hard inside.

50. Geositta cunicularia (Vieill.); Scl. et Salv. P. Z. S. 1868, p. 140.

One can scarcely take a ride in the country here without being aware, before having gone a great distance, of a small and active bird which constantly keeps flitting just in front of your horse, every now and then alighting on a clod of earth, but off again before you have reached it. It lives on the ground, like our familiar little Wheatear, and constantly flits its tail up and down; it also has a habit, like that bird, of sometimes taking short quick runs and stopping as suddenly as it started. Resident here. Pretty common at Baradero in April.

51. FURNARIUS RUFUS (Gm.); Scl. et Salv. P. Z. S. 1868, p. 140.

Resident and common throughout the year. One of the most homely birds we have, there being scarcely a rancho or hut in the campo that has not got its pair of Oven-birds. It has a loud and rather melodious whistle, which it constantly utters, but especially in the spring when its nest is threatened. During the winter it is busily engaged in repairing its nest for the ensuing spring. It usually lays in October; but its breeding-habits are rather irregular. Common at Baradero in April.

52. CINCLODES FUSCUS (Vieill.); Scl. et Salv. *l. s. c.*

I spent nine days in quarantine a year ago last March on Flores Island, at the mouth of the river Plate and about twenty miles from Montevideo; and during that time this was the only land-bird which inhabited that lonely spot, though a flock of "Chorlos" (*Eudromias modesta*) paid us a flying visit one morning. It feeds on small larvæ and insects, and is fond of rough ground, where there is little herbage, in the neighbourhood of water. I have observed it in this district from March to the end of July; whether it breeds here or not I do not know. In the winter it generally goes in small parties, sometimes in large flocks. Common at Baradero in April.

53. PHLŒOCRYPTES MELANOPS (Vieill.).

Synallaxis melanops, Scl. et Salv. *l. s. c.*

Resident, and the commonest of the marsh-loving Synallaxinæ. They frequent reed-beds, especially where there is a pretty thick growth of "sauce" or willow shoots; and against one of these willow shoots, six or eight inches above the water, is constructed an oval nest of mud and reeds, lined with a few feathers and hair, the opening in the side; it is fastened to its support by reeds. The female lays five eggs, in colour uniform light blue. Common at Baradero in April. Iris wood-brown.

54. LEPTASTHENURA ÆGITHALOIDES (Kittl.); Scl. et Salv. P. Z. S. 1869, p. 632.

On the 2nd July of this year (1876) I saw a single bird in an ombo tree at Belgrano; it was busily hunting over every twig and leaf in a Tit-like fashion, and uttered a low piping note. It is the only example I have seen here; but I believe it not uncommon up the Parana.

55. SYNALLAXIS ALBESCENS, Temm.; Scl. et Salv. P. Z. S. 1868, p. 141.

On the 11th July, 1876, I shot a male bird at Las Conchas. It frequented low bushes and reeds by the river, and was the only one seen. Its stomach contained small insects, chiefly Coleoptera.

Upper mandible dark horn-colour, base pale flesh-colour. Under mandible pale flesh-colour. Legs and feet pale brown. Iris fulvous brown.

56. SYNALLAXIS SULPHURIFERA, Burm.; Scl. et Salv. P. Z. S. 1869, p. 632.

Resident, and not very uncommon in reed-beds, frequenting much the same places as *Limnornis curvirostris*. I have generally found several in the same locality. Iris wood-brown.

57. SYNALLAXIS MALUROIDES, D'Orb.; Scl. et Salv. P. Z. S. 1868, p. 141.

Resident but rare. Frequents beds of low reeds and thick "paja" grass in marshy places. The notes of *S. sulphurifera* and *S. maluroides* are much alike—*cree cree*, uttered in a high key. I have not observed this bird where the reeds grow more than two or three feet high; and it frequents the same situations as *Cistothorus platensis.* Its food, like that of the other small Synallaxinæ, consists of minute insects, chiefly Coleoptera. Iris primrose-yellow.

58. ANUMBIUS ACUTICAUDATUS (Less.); Scl. et Salv. P. Z. S. 1868, p. 141.

Synallaxis major, Gould.

The Synallaxinæ are largely represented in Buenos Ayres; and, with the exception of the present species, all the members have nearly similar habits. To a stranger nothing is more striking on his arrival here than the large and untidy-looking masses of sticks, one or more of which may be seen in most of the trees of any height. These nests are altogether out of proportion to the number of birds; but as they are strongly built, and last for years, their number may be easily accounted for. They are of enormous dimensions for the size of the bird, and consist of two rooms, a passage leading from the upper to the lower. The upper one is used, more or less, all the year round for roosting in; and the owners are generally busily engaged in repairing their nests whenever they are not taken up with eggs or young.

I am not aware when poplar trees were first introduced into this country; but their introduction has caused a considerable revolution in the habits of this bird. From its short wings it is evidently not fitted for a long sustained flight; and yet the proportion of birds that build in poplars in preference to any other tree is at least ten to one; and these are naturally the highest trees in the country. Nor is this all: the motto of this bird is "Excelsior;" and as the poplars increase in height the Señateros become more ambitious, and it is now quite a common sight to see two or more nests in the same tree, the highest seventy or eighty feet from the ground. Whenever the bird wishes to ascend to its nest, it starts from the ground at just sufficient distance from the nest to enable it, by taking a gradual curve, to just fetch the desired spot; and if it fails to do this, it reaches it by hopping upwards from bough to bough; for it is quite unable to turn in its flight, or to rise except by a gradual upward motion.

The ultimate result of this may be a race of Synallaxinæ with longer and stronger wings, and, by correlative growth, a larger bird altogether; thus from the present short-winged, heavy-bodied bird will probably be developed a larger and stronger form, with greater powers of flight. The tail of this bird is always much abraded, doubtless from being in such constant contact with the nest.

59. Limnornis curvirostris, Gould; Scl. et Salv. *l. s. c.*

I am at a loss to understand how this bird could have escaped the observation of naturalists till Mr. Darwin's visit to South America. It is, certainly, only found in certain spots; but in these it is quite common. Amongst the thick reed-beds bordering the La Plata, which sometimes extend for some miles inland, *L. curvirostris* may always be found. Like the last-named species, it has a very inquisitive disposition, and never allows an intruder in its neighbourhood without protesting in loud and angry cries. This note or, rather, notes it is not easy to describe; they are a series of harsh chatterings, and can be heard at a great distance. Besides this it has another note, a sort of subdued low jarring, just like our little Sedge-Warbler's note; and this it utters when completely hidden by the reeds. Like that bird, too, if a clod of earth or stone be thrown amongst the reeds near it, it can always be provoked to rattle away. It is a true reed-bird, and lives near the ground in the thickest reed-beds. If alarmed, or its curiosity excited, it creeps upwards by a series of short jerky movements high enough to see the object of its dislike, and then commences its loud angry screams. It is rarely found away from these reed-beds, and seems always anxious to seek their shelter. It seldom takes wing, and never flies far; in the air it resembles the Synallaxinæ, and sometimes while flying spreads its tail. I have generally seen it in pairs, both winter and summer. Its food consists of small insects, chiefly spiders. Iris chocolate. Upper mandible dark slate-colour, under one flesh-colour. Legs and feet pale slate.

60. **Phacellodomus ruber** (Vieill.); Scl. et Salv. *l. s. c.*

Though I have only seen this bird in the spring, I am inclined to think that it is at least partially resident. It frequents the thick plantations of reeds, "sauce," and "ceiba" trees in the riverain wood, but, from its skulking habits, is not often seen.

61. **Phacellodomus frontalis** (Licht.); Scl. et Salv. Nomencl. p. 65.

Like the last species, I have only seen this bird in the spring, with the exception of one example shot in April of this year. It breeds in October; and when sitting, the old bird will allow herself to be taken on the nest. It feeds on minute insects, and seems especially fond of spiders, which abound in the reed-beds and thickets it frequents. In flight it somewhat resembles the Synallaxinæ, and altogether, from its habits, would seem to be closely related to the genus *Synallaxis*. I have also met with it in August. Iris orange-yellow; legs and feet very pale slate; upper mandible dark horn-colour, lower mandible like legs.

On the 14th April I shot a bird at Baradero which would seem to be referable to this species, but differs a little from any I have seen. Its underparts are lighter than in any I have examined; and the edges of the under mandible for three quarters of its length from the base are orange-yellow.

	Belgrano bird, 11th April, 1876.	Baradero bird, 14th April, 1876.
Total length	6·2	5·0
Beak	·6	·4
Tarsus	·7	·7
Iris	orange-yellow.	dark wood-brown.

62. **Thamnophilus argentinus**, Cab.; Scl. et Salv. P. Z. S. 1868, p. 141.

Spring and summer visitor, but occasionally seen in the winter. It has an exceedingly loud jarring note, somewhat resembling that of *Troglodytes furvus*, and for its size makes an almost incredible noise. For some time I could not make out what bird it was I constantly heard in the thickest cover of tala, sauce, and reeds, which grow abundantly in the riverain wood; but I soon found that I had only to stand still for a few moments, and the inquisitive disposition of this bird overpowered its fear of man. It is more sluggish in its movements than either *Phacellodomus ruber* or *P. frontalis*, but, with this exception, seems to resemble them closely in its habits. Its food consists of small insects, principally Coleoptera. Iris light fulvous; upper mandible dark horn-colour; under mandible, legs, and feet pale slate.

63. CALLIPERIDIA FURCIFERA (Shaw); Scl. et Salv. Nomencl. p. 90.

Our three Humming-birds are all summer visitors, a few remaining during the winter. This species is the most uncommon, but is occasionally seen in the riverain wood, and, like the other two, may generally be found hovering over the flowers of the ceiba tree, a species of *Acacia*. I observed one on the 29th of July last, at Belgrano railway-station, perched on a telegraph-wire; the day was very warm and bright. ♀. Beak dark brown.

64. HYLOCHARIS SAPPHIRINA (Gm.); Scl. et Salv. *l. c.* p. 93.

Common in the summer. Beak light flesh-colour, tip very dark brown.

65. CHLOROSTILBON SPLENDIDUS, Vieill.; Elliot, Ibis, 1875, p. 165.

The commonest species of Humming-bird we have, and abundant in the summer. I saw one specimen on a bright warm day the beginning of last June in a sheltered garden near the river; but it is unusual to see them in the winter. They feed chiefly from the flowers of the ceiba tree; and the stomach of one shot on the 7th March contained fragments of minute Coleoptera. Beak dark flesh-colour, three quarters of upper mandible from the tip black.

66. ANTROSTOMUS PARVULUS (Gould).

Resident, but probably, from its shy and retiring disposition, considered rarer than it really is. Like our Nightjar, it frequents open spots in sheltered coppices or banks under a sheltering hedge of thorn, and may generally be found in the same place from day to day, coming out about dusk in quest of moths and other insects.

67. Hydropsalis furcifera (Vieill.); Scl. et Salv. Nomencl. p. 96.

Hitherto I have obtained no specimen of this bird, though I have constantly observed it in the spring and autumn. It lives on the ground, generally in damp situations and where the grass is long and thick enough to afford some slight cover. I have always observed it in parties of four or five individuals. Its flight is noiseless, and performed by jerky erratic movements; when on the ground it always squats instead of standing.

68. Campephilus boiæi (Wagler); Scl. et Salv. Nomencl. p. 98.

Resident, and common to the north of Buenos Ayres and on the banks of the Parana to Baradero.

69. Ceryle americana (Linn.); Scl. et Salv. P. Z. S. 1869, p. 160.

Not uncommon about the creeks and streams at the mouth of the Parana. Common at Baradero in April.

70. Guira piririgua (Vieill.); Scl. et Salv. P. Z. S. 1868, p. 142.

A few remain with us all the winter; but the majority leave after the breeding-time. They have two broods in the season. Their usual note is a succession of harsh screams; but they also have a rather musical note, which is uttered in two keys, and is something like the Curlew's note at home. Their food consists of snails, slugs, bits of meat or offal—in fact, almost any thing. In some of their habits and manner of flight they resemble our common Magpie at home, never flying far without alighting, and generally keeping together in small parties. During cold and cloudy weather in winter they are rarely seen; but a bright warm day seems to endue them with fresh life and activity.

71. Coccyzus melanocoryphus (Vieill.); Scl. et Salv. P. Z. S. 1869, p. 633.

A spring and summer visitor. Most common about the riverain wood. I have not observed *Coccyzus cinereus* in this neighbourhood.

72. Conurus patagonus (Vieill.); Scl. et Salv. Nomencl. p. 111.

Resident, and not uncommon wherever there is a tosca-cliff of sufficient height for nesting-purposes. In the clefts of this it breeds. It feeds chiefly on buds and the seed of the sena-sena, a species of *Acacia*, very common here.

73. Bolborhynchus monachus (Bodd.); Finsch, Papag. ii. p. 115.

Last winter I observed two of these birds about ninety miles to the south of Buenos Ayres, where they are well known and often seen. Specimens are sometimes seen near the city; but are probably escaped birds, as it is very commonly kept there in confinement. Unlike all other Parrots here, this bird builds in trees a large structure of sticks, instead of nesting in holes in steep cliffs.

74. Otus brachyotus (Forst.); Scl. et Salv. P. Z. S. 1868, p. 143.

Resident and generally distributed. Usually seen about dusk, when it sallies out from amongst the thistles or coarse grass where it has been concealed during the day.

75. Pholeoptynx cunicularia (Mol.); Scl. et Salv. *l. s. c.*

Resident and very common in the spring, retiring to the campo to breed, and, as the winter approaches, coming close to the towns and villages. When necessary it burrows a hole for itself, but makes use of Viscacha holes when possible. They are seen during the day and about dusk, and have a curious and pretty habit of rising almost perpendicularly from the stone or clod of earth on which they have been perching, and toying or playing with each other in the air. Their principal food is mice. Common at Baradero in April.

76. Strix flammea, Linn.

Nocturnal, and more often heard than seen. For nesting it takes possession of Pigeon-cots, or resorts to holes in steep banks, where it screeches at night like our White Owls at home.

77. Circus cinereus (Vieill.); Scl. et Salv. *l. s. c.*

Rarely seen so far north as the city, but occasionally occurring here. Legs, feet, and iris orange.

78. Asturina pucherani, Scl. et Salv. Ex. Orn. p. 177, et P. Z. S. 1869, p. 634.

Resident and common. A sluggish lazy bird, fond of shady secluded places; it may always be found in the riverain wood, appearing almost as motionless as the stump or bough on which it is perched. Its food consists of rats, mice, frogs, and sometimes grasshoppers. In the immature bird the iris is grey with a tinge of yellow; cere, legs, and feet pale orange. In the adult the iris is pale orange; cere, legs, and feet dark orange. The plumages of the immature and adult birds also differ exceedingly; but their changes are now well known.

79. Buteo albicaudatus, Vieill.; Scl. et Salv. P. Z. S. 1869, p. 634.

Resident and not uncommon. It has a curious whistling note, which it constantly utters while on the wing. Iris light reddish brown. Cere flesh-colour. Beak pale slate, tip darker. Legs and feet pale orange.

80. Hypotriorchis femoralis (Temm.); Scl. et Salv. P. Z. S. 1868, p. 143.

Winter visitor, but not common—the only specimen I have obtained being an adult female, shot by a friend on the 16th of last July. The female is larger than the male; and the colours of her plumage are not so clear and well defined. The stomach of this specimen contained the remians of a small bird. Cere pale lead-colour. Iris dark brown. Legs and feet very pale orange.

81. Tinnunculus sparverius (Linn.); Scl. et Salv. *l. s. c.*

Autumn and winter visitor, occurring in considerable numbers. It has an exceedingly rapid and dashing flight. Its food consists of mice and small birds. Pretty common at Baradero in April.

82. Elanus leucurus (Vieill.); Scl. et Salv. P. Z. S. 1869, p. 160.

Resident, but not common. This is one of our handsomest birds, being very conspicuous from its lofty aerial flight. It sometimes remains circling in the air for a long time together. I found a few at Baradero in April. Iris light reddish brown. Legs and cere pale orange. Beak black.

83. Rostrhamus sociabilis (Vieill.); Scl. et Salv. *l. s. c.*

Resident and not uncommon in marshes and swamps. On the wing its white tail-coverts are an unfailing mark for distinguishing the species. Its food consists of water-mollusks; and its strong hooked upper mandible is admirably adapted for extracting the soft portions from their shells; from this habit it has gained the name of "Aguila de caracoles." Iris crimson; beak dark lead-colour; legs orange. As it increases in age its beak becomes black and its legs a darker orange.

84. Polyborus tharus (Mol.); P. Z. S. 1869, p. 634.

Resident and abundant. Feeds indiscriminately on lizards, dead fish, and any carrion. Common at Baradero in April.

85. Milvago chimango (Vieill.); Scl. et Salv. P. Z. S. 1868, p. 143.

Resident and more numerous than *P. tharus.* During the winter a partial migratory movement takes place in a northerly direction. They nest both on the ground and in low trees or bushes, building a large structure of twigs and sticks, lined with wool and hair. Common at Baradero in April.

86. Phalacrocorax brasilianus (Licht.); Scl. et Salv. P. Z. S. 1868, p. 146.

Resident and common both in the river and large lagunas in the campo. Seen at Baradero in April.

87. ARDEA COCOI, Linn.; Scl. et Salv. P. Z. S. 1869, p. 634.

Resident and the commonest Heron here. Common at Baradero in April.

88. ARDEA EGRETTA, Gm.; Scl. et Salv. Nomencl. p. 135.

Not so numerous as the next mentioned, and, like that bird, in dry seasons not seen for months together. Iris dark orange. Legs dark lead-colour.

89. ARDEA CANDIDISSIMA, Gm.; Scl. et Salv. *l. s. c.*

Resident; but its absence or presence is very much dependent on the amount of rain we have. Iris pale yellow; legs dark lead-colour.

90. ARDETTA INVOLUCRIS (Vieill.); Scl. et Salv. P. Z. S. 1869, p. 635; Hudson, P. Z. S. 1875, p. 623.

Probably resident, though I have only observed it in the spring. It frequents the thickest reed-beds, and is very shy. When flushed it has a frightened hurried flight, and always drops again before flying far. Iris pale orange, the centre rather lighter; legs light pea-green; beak yellowish green. The young are at first covered with quite black down.

91. NYCTICORAX OBSCURUS, Bp.; Scl. et Salv. Nomencl. p. 136.

Resident, and more generally distributed than the last-named species. Feeds chiefly on fish. Iris dull crimson; upper mandible and tip of lower one black, remainder of lower mandible yellowish green; legs light pea-green, undersides with a tinge of yellow.

92. CICONIA MAGUARI, Gm.; Scl. et Salv. Nomencl. p. 126.

Resident, and generally very common; but during the dry season very few are seen. In December last I saw two birds of the year at Punta Lara barely able to fly; these may have been bred there. Common at Baradero in April.

93. FALCINELLUS IGNEUS (Gm).

Ibis falcinellus, Scl. et Salv. P. Z. S. 1868, p. 145.

Resident, though more numerous in the winter than summer, very common, and generally distributed. Eminently gregarious in its habits, and flying in a large body in a V-shaped form. My statement that they feed on carrion should be modified, as I have since found freshwater mollusks in their stomachs. All I have shot have a strong, offensive smell. Iris light reddish brown. Common at Baradero in April in large flocks.

94. Theristicus melanopis (Gm.).

Ibis albicollis, Burm. La Plata-Reise, ii. p. 510.

A winter visitor, arriving in May and leaving in October. I have not observed it north of this city. Its long, curved beak suggests an affinity to the Curlew; but I have never seen it except on comparatively dry ground, and its habits are quite different from theirs. It is usually found in small parties, whose harsh cries can be heard at a great distance. Its flight is easy and powerful, and generally performed at a considerable height in the air. It feeds on grubs and large worms.

95. Platalea ajaja, Linn.; Scl. et Salv. P. Z. S. 1869, p. 145.

A winter visitor, going in flocks. Feeds on soft-bodied water-insects and grubs. Generally distributed. A few at Baradero in April.

96. Chauna chavaria (Linn.); Scl. et Salv. Nom. p. 128.

Resident and very common. The breeding-habits of this species are curious. On the 24th June (our midwinter) I was shooting with a friend, who found a nest containing eggs; and on the 28th the same thing happened again in a different place. On the latter occasion the bird was seen to leave the nest. One egg taken is exactly like some I obtained last October*. The nest is a massive structure of reeds, about two feet in diameter, and from one to two feet in thickness. The bottom of the nest is always in the water. Common at Baradero in April.

97. Bernicla poliocephala, Scl. et Salv. P. Z. S. 1876, p. 366.

Common in winter about fifty miles to the south of the

[* We hope Mr. Durnford will forward to England some specimens of the egg of *Chauna*, as they might assist in explaining the enigma of its correct position in the natural series.—Edd.]

city; and I observed it last year, when we had unusually severe weather, within thirty miles of Buenos Ayres; it rarely, however, comes as far north as this.

98. Cygnus nigricollis (Gm.); Scl. et Salv. P. Z. S. 1868, p. 145.

Winter visitor, but the time of its arrival and departure very uncertain, depending chiefly on the mildness or severity of the season. This has been a very mild winter, and comparatively few Wildfowl have visited us. This time last year, 22nd July, the market was well supplied with Swans and Ducks; but the gunners have had a bad time of it this year. Common at Baradero in April.

99. Cygnus coscoroba (Mol.); Scl. et Salvin, P. Z. S. 1876, p. 371.

Winter visitor, like the preceding; and, like that bird, few have come this year.

100. Querquedula flavirostris (Vieill.); Scl. et Salv. P. Z. S. 1868, p. 146.

A few breed here; but the majority of those obtained in the winter are visitors from the south. This and the following species have very much the habits of our little Teal at home—when flushed, following the course of the stream and dropping suddenly. Iris wood-brown.

101. Querquedula cyanoptera (Vieill.); Scl. et Salv. P. Z. S. 1869, p. 160.

Pretty common in the winter, a few breeding here. Frequents the same situations as the two last-named species, small pools and watercourses, but not generally found in the large lagunas. Common at Baradero in April. Iris scarlet, with a tinge of carmine; legs and feet bright orange.

102. Querquedula versicolor (Vieill.); Scl. et Salv. P. Z. S. 1868, p. 146.

Very common, many breeding in the neighbourhood. Common at Baradero in April. Flocks of this species do not mix with those of any other; but their flight and habits are similar to those of *Q. flavirostris.* Iris wood-brown.

103. QUERQUEDULA BRASILIENSIS (Gm.); Scl. et Salv. P. Z. S. 1869, p. 635.

Common to the north of Buenos Ayres; but I have never met with it to the south of the city. A little higher up the river than Belgrano it is quite common, frequenting pools and open water in the thick reed-beds. The male has a more brilliant speculum of metallic green than any bird I know. Iris wood-brown; legs bright vermilion.

104. DAFILA SPINICAUDA (Vieill.); Scl. et Salv. P. Z. S. 1868, p. 146.

The commonest of the larger species of Ducks, and in the winter found in very large flocks. Common at Baradero in April. Iris wood-brown.

105. DAFILA BAHAMENSIS (Linn.); Scl. et Salv. *l. s. c.*

Not common; and this year I have obtained no specimens. Generally found to the south of Buenos Ayres.

106. MARECA SIBILATRIX (Poepp.); Scl. et Scl. P. Z. S. 1876, p. 395.

Mareca chiloensis, Scl. et Salv. P. Z. S. 1869, p. 635.

With the exception of *Metopiana peposaca,* this is the Duck most valued for the table. From its note it is generally called the "Whistler" amongst Englishmen, and by natives "Overo" (speckled), from its beautiful mottled plumage. The greater part that come here are winter visitors; but a few breed amongst the reeds and coarse grass in some of the extensive marshes. Like *Metopiana peposaca,* it prefers large lagoons to the small pools and streams frequented by the smaller ducks, and is generally shy and flies very high. Common at Baradero in April.

107. METOPIANA PEPOSACA (Vieill.); Scl. et Salv. P. Z. S. 1868, p. 146.

Common in the winter. The strongest and highest flyer of all our Ducks.

108. ERISMATURA FERRUGINEA, Eyton; Scl. et Salv. P. Z. S. 1876, p. 404.

Resident, but scarce. From the shortness of its wings it is scarcely able to fly.

109. Columba maculosa* (Temm.); Scl. et Salv. Nomencl. p. 132.

Common to the north of Buenos Ayres; but I have not observed it to the south of the city. Towards dusk large flocks wing their way to the marshes (I suppose, to drink) from the high ground. Immature birds want the fine grey and black transverse markings on the sides of the neck above the breast which are found in the adult. Common at Baradero in April. Legs red, between scarlet and carmine.

110. Zenaida maculata (Vieill.); Scl. et Salv. P. Z. S. 1868, p. 143.

Very common, in the winter congregating in enormous flocks. Its chief food is the seed of the cardoon, which here covers the face of the country; and in June last year I took more than 700 seeds from the crop of a single bird. Common at Baradero in April. Legs and feet dull scarlet, inclining to carmine.

111. Columbula picui (Temm.); Scl. et Salv. *l. s. c.*

Very common, and found in gardens quite within the city. Partially gregarious in winter.

112. Leptoptila chalchauchenia, Scl. et Salv. P. Z. S. 1869, p. 633.

Seen occasionally in the riverain wood, but not a common bird. Legs scarlet, with a tinge of crimson.

113. Rallus nigricans (Vieill.); Scl. et Salv. Nomencl. p. 139.

Pretty common in reed-beds, coming out to feed in the morning and about dusk. On the 13th October last I found a nest in a clump of thick reeds frequented by *Limnornis curvirostris* and *Synallaxis sulphurifera,* in the riverain wood close to Belgrano. From the peculiar character of the nest I was careful to identify the owner, and, after having flushed the old bird once, retired some little distance to give it time to return. This it readily did; and on cautiously approaching and parting the rushes I was enabled to get a second view of it sitting in the nest, which, however, it left immediately on seeing me. The nest was placed about three feet from the ground, bound to and supported by the reeds which grew close around it. It was oval in shape, and entirely composed of little bits of dead reed cleverly woven together, and forming a structure ten inches in height by seven, outside measurements. The aperture was in the side, and a little over three inches in diameter. How the old bird could so readily enter and leave this hole I do not know. It sat with its head partly projecting. The eggs were two in number, of a dirty white colour, measuring 1·4 inch by 1; and as they were considerably incubated, I conclude two is the full complement. The food of this species consists of mollusks, larvæ; and once I found the remains of a small fish in the gizzard. Iris dull crimson; beak pea-green, with a coral-red spot on the side, the base of lower mandible, and the base of upper mandible when the bird is first killed, having a tinge of pale blue; legs and feet pinkish coral.

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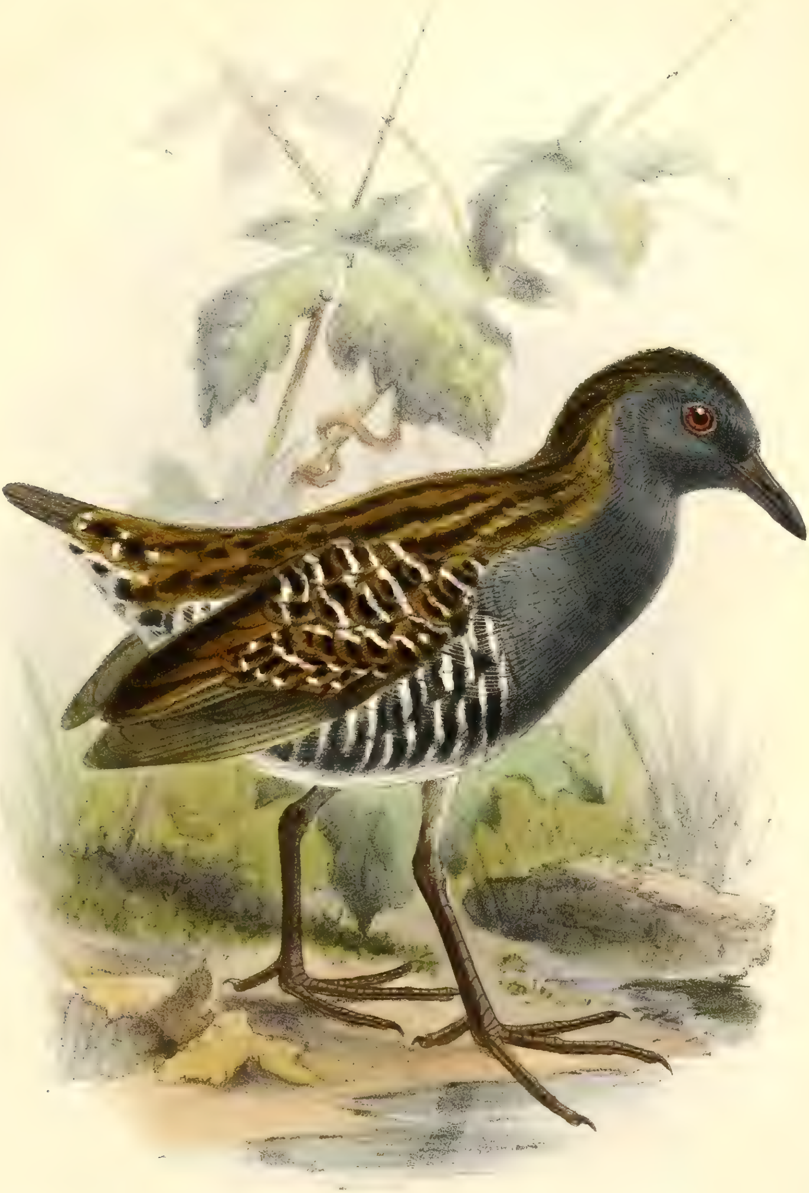
* [*C. picazuro* may be the species referred to here, being the Pigeon of this group usually sent from Buenos Ayres. *C. maculosa* occurs near Mendoza, and further south in Patagonia.—Edd.]

114. ARAMIDES YPECAHA (Vieill.); Scl. et Salv. P. Z. S. 1868, p. 144.

Common in reed-beds, coming out about dusk and in the early morning to feed. Common at Baradero in April.

115. PORZANA SPILOPTERA, sp. nov. (Plate III.)
Zapornia spiloptera, Burm. MS.

I have frequently flushed a small Crake from the "Paja" and rough scrub near the river at Belgrano, but never been able to obtain a specimen. On the 25th August 1876, however, a gardener gave me a bird which his dog had caught in a garden at Belgrano, and which, I think, though I cannot be certain, is of the same species as the small Crakes I have seen before. As far as I can learn, the only other specimen of the bird known is in the Museum of Buenos Ayres, and will be described by Professor Burmeister under the name of *Zapornia spiloptera*, in his new work on the fauna of this country. This specimen, like mine, was taken in a garden almost in the city of Buenos Ayres.



J. G. Keulemans lith.

M & N Hanhart imp.

PORZANA SPILOPTERA

AMERICAN MUSEUM
CENTRAL PARK
NEW YORK.
OF NATURAL HISTORY.

P. spiloptera is nearly allied to *P. spilonota* (found by Darwin in the Galapagos archipelago, and figured and described in the 'Voyage of the Beagle'). It differs, however, from the Galapagos bird in having irregular white stripes, and not merely white spots, on the wings; and the white markings on the flanks and stomach are larger and clearer than in Mr. Darwin's bird. The back also of *P. spilonota* is ferruginous brown, but that of the Buenos-Ayres bird olive-brown with black markings. ♂. Total length 5·5, beak ·5, tarsus ·7. Head above olivaceous brown and black, forehead very dark slate, nearly black. Sides of head, throat, chest, and stomach dark slaty grey. Neck above and back olivaceous, centre of each feather broadly marked with black. Flanks very dark grey, with transverse bars of white. Primaries dull brown. Secondaries the same, but with a small white wedge-shaped mark in the centre of some of the feathers near their tips. Greater wing-coverts dark olivaceous, distinctly but irregularly striated with white. Tail dark brown, edges of feathers lighter. Under tail-coverts black and white in transverse bars. Beak very dark horn, nearly black. Legs and feet of a browner colour, and rather lighter. Iris crimson, inclining to scarlet.

The bird had been kept alive for a day or two; and its stomach was quite empty when I received it.

116. PORPHYRIOPS MELANOPS (Vieill.); Scl. et Salv. P. Z. S. 1869, p. 634.

Not uncommon, but, from its skulking habits, rarely seen. Legs and feet pale olivaceous.

117. FULICA LEUCOPTERA, Vieill.; Scl. et Salv. Ex. Orn. pl. 60, p. 119.

Common in almost every 'arroyo' and lagoon in the country, where reeds and aquatic plants afford any cover.

118. FULICA ARMILLATA, Vieill.; Scl. et Salv. P. Z. S. 1868, p. 145.

I have only observed this Coot to the north of Buenos Ayres; but there it is quite common. It does not seem to mix with the last-named species.

119. Aramus scolopaceus (Gm.); Scl. et Salv. P. Z. S. 1869, p. 161.

Resident and common in marshes amongst reeds. It has a heavy laborious flight, performed by slow beats of the wings, which it sometimes raises so high as nearly to meet over its back. It has a loud harsh note, very like the crying of a child. On the 30th July I found a nest containing six eggs. It was a large structure of reeds, nearly three feet in diameter and ten or twelve inches deep, and was placed amongst reeds about a foot above the water; it was lined with smaller reeds, a slight depression in the centre receiving the eggs. I saw the old bird standing on the edge of the nest. The eggs have a stone-coloured ground-colour, slightly polished and thickly streaked and speckled with light and dark rufous brown, the markings being chiefly on the larger end, but varying much in intensity in different examples; they measure $2·5 \times 1·8$.

120. Parra jacana (Linn.); Scl. et Salv. P. Z. S. 1868, p. 145.

I believe, very generally distributed, though I have only observed it twice. It is graceful in its movements on the ground; its extremely long feet and claws enable it to walk without difficulty on floating aquatic plants, where it is generally found feeding on small insects, which it takes from the surface. It is a slow and awkward flier, its long legs, which it trails behind it, being a considerable hindrance. Its food consists of minute mollusks and aquatic insects. Iris wood-brown; beak orange; legs olivaceous.

121. Vanellus cayennensis (Gm.); Scl. et Salv. P. Z. S. 1869, p. 162.

The ubiquitous "Tero-tero" is perhaps the best-known bird in the country, being extremely common and generally distributed. In the winter it usually goes in flocks, and at that season approaches close to towns. It probably has two, and sometimes three, broods in the season. During the time of courtship the male bird performs many strange antics to attract the female, strutting around her with tail depressed and expanded and holding his head as high as possible, the female in the mean time appearing perfectly indifferent. Sometimes two or three males are seen before a single female, and never separate without a fight. I have never seen them use their wing-spurs in their encounters, though they strike at each other with their beaks, and sometimes continue fighting in the air. To the sportsman this bird is a constant nuisance, invariably uttering its cries at a critical moment when he is creeping up to Ducks or game. Common at Baradero in April.

122. Charadrius virginicus, Borkh.; Scl. et Salv. Nomencl. p. 142.

Pretty common in February and March; but I have not observed them at any other season. About a dozen, shot on the 5th of the latter month, were in full moult. They are fond of high and pretty dry ground; but yet I do not think they wander far from water. Iris wood-brown; beak, legs, and feet black.

I think I observed *Oreophilus ruficollis* here on the 21st April of this year; but I could not satisfactorily identify it.

123. Eudromias modesta (Licht.); Scl. et Salv. P. Z. S. 1868, p. 144.

Autumn and winter visitor; found in large flocks.

124. Thinocorus rumicivorus, Eschsch.; Scl. et Salv. P. Z. S. 1868, p. 143.

A winter visitor, sometimes found in large flocks. In their habits they resemble the Rails and Sandpipers. Like the former they sometimes squat closely to the ground till almost trodden upon, and when put up run some distance before taking wing. They frequent very arid dry places, and also damp marshy ground. In the air their long, pointed wings, and rapid erratic flight, added to their low whistling note, always suggests an affinity to the Tringæ. In size and weight I have found these birds to differ exceedingly; and this is not dependent on sex. The black lines which extend from the corners of the lower mandible, enclosing the white of the throat, and join the black band across the lower part of the chest, are more clearly defined in the male than in the female; and the latter has the throat dusky white. The young resemble the females. Iris wood-brown; feet and legs vary from dull yellowish green to orange. Their food consists of fibrous vegetable matter and seeds. A few seen at Baradero in April.

125. Himantopus brasiliensis, Scl. et Salv. P. Z. S. 1873, p. 454.

Himantopus nigricollis, Scl. et Salv. P. Z. S. 1868, p. 144.

Occasionally resident, the greater part leaving us in the spring and summer. Common in every marsh and on the banks of every "arroyo" in the country. Their movements on the ground are very graceful and elegant, and they walk or run with equal ease. They generally go in small parties, and when disturbed will often circle for a long time high above one's head, uttering angry screams at the intruder. Iris carmine; legs between scarlet and bright pink; beak nearly black. Common at Baradero in April.

126. Phalaropus wilsoni, Sabine; Scl. et Salv. Nomencl. p. 144.

The only specimens I have were shot by a friend a little to the west of Buenos Ayres in February.

127. Gallinago paraguaiæ (Vieill.); Scl. et Salv. P. Z. S. 1868, p. 144.

The greater part of these birds are migratory, arriving in April and leaving in August; but though I have not yet found any nests, I feel sure some few breed in this neighbourhood. During the winter they are sometimes extremely numerous, affording excellent sport: but their movements are very uncertain; for where there may be hundreds one day, the next there are scarcely any to be seen. At this season they go in small parties, or in flocks numbering three or four hundred birds. During the spring they go through the same aerial movements as the common Snipe at home, rising to a great height by a circling motion, and "drumming" whilst descending in a diagonal line. How is this curious habit to be accounted for in the South-American and European forms, except by the theory of inheritance from a common progenitor?

128. RHYNCHÆA SEMICOLLARIS (Vieill.); Scl. et Salv. *l. s. c.*

Resident and found in small parties during the winter. Its habits much resemble those of the little Jack Snipe at home, being very reluctant to take wing, and, having done so, dropping again before long.

129. GAMBETTA MELANOLEUCA (Gm.); Scl. et Salv. *l. s. c.*

I think a few breed here; but this is a bird most commonly seen in winter. Its note is very like that of the Greenshank at home. Legs red with a tinge of orange. Common at Baradero in April.

130. GAMBETTA FLAVIPES (Gm.); Scl. et Salv. *l. s. c.*

Resident, but in the winter receiving a considerable accession to its numbers. Its habits are very similar to those of *Gambetta melanoleuca*; and it is found in much the same situations as that bird—banks of streams and ditches, small lagoons and pools. Legs pale orange-yellow. Common at Baradero in April.

131. ACTITURUS BARTRAMIUS (Wilson); Scl. et Salv. Nomencl. p. 146.

"Batitu," "Chorlito." Very common from December to the beginning of April. During this season large quantities are shot for the markets; and when they have been here long enough to get fat on locusts and grasshoppers, which form their principal food, they are excellent eating. The flocks are constantly arriving and departing; and from the fact of my frequently hearing them at night passing over the place, when they whistle and call to each other, I do not think the same birds remain more than three or four weeks with us. They frequent high dry ground, preferring that covered with thistles and coarse grass, but carefully avoid low damp places. Whilst at Baradero, from the 15th to the 17th April, I learnt, from inquiries made there, that the Batitu had only left two or three days before my visit. As I could hear of none having been seen near Buenos Ayres after the 3rd April, I conclude the migratory movement takes place in a west-north-westerly direction from here.

132. TRYNGITES RUFESCENS (Vieill.); Scl. et Salv. Nomencl. p. 146.

I have never met with this bird myself; but a friend shot some on the 20th February a little to the west of Buenos Ayres. The stomachs of two I opened contained small seeds. Iris wood-brown; legs and feet dull orange; beak and claws black.

133. LIMOSA HUDSONICA (Lath.); Scl. et Salv. Nomencl. p. 146.

Common from April to September about lagoons and "arroyos" to the south of Buenos Ayres. It is sometimes here called "Woodcock." In habits it much resembles the Bar-tailed Godwit at home.

134. RRYNCHOPS NIGRA, Linn.; Scl. et Salv. P. Z. S. 1869, p. 634.

I have not myself observed this species; but my collection contains two specimens, shot respectively in January and November, both near Buenos Ayres. They vary much in size.

135. PHAËTHUSA MAGNIROSTRIS (Licht.); Scl. et Salv. P. Z. S. 1871, p. 567.

Occasionally seen near Belgrano, appearing to be a freshwater Tern; but of its habits I know very little. I found it common at Baradero in April in small parties; and I watched one flock for some time, the individuals of which kept circling over a millpond, which evidently held a good supply of small fish; for they constantly kept darting into the water. This species has a note quite unlike that of any other Tern I know; it is very like the cry of the "Tero-tero" (*Vanellus cayennensis*); and for this bird I have often mistaken it. Beak pale orange; legs and feet pale slate-colour.

136. STERNA TRUDEAUII, Aud.; Scl. et Salv. P. Z. S. 1871, p. 570.

In March of last year, during quarantine on Flores Island, at the mouth of the La Plata, I constantly saw a few of these birds about; and later I saw several near Montevideo. Since then I have occasionally seen a few in this neighbourhood at every season except the spring. I shot one on the 17th October last near Punta Lara, which was flying steadily in a north-westerly direction in company with another. Total length 13·5, beak 1·4, tarsus ·5. Iris wood-brown; base and tip of beak dull yellow, remainder black; legs and feet dark red, between scarlet and carmine; head white, with a long black streak in front of and behind the eye; remainder of the plumage pearl-grey. On the 5th August I observed two Black-headed Terns fishing in some lagoons to the north of Buenos Ayres. They appeared to me to be *Sterna cassini*; but I am not aware that that bird comes so far north as this*.

137. STERNA SUPERCILIARIS, Vieill.; Scl. et Salv. P. Z. S. 1871, p. 571.

Frequents shallow inland lagoons and small streams, and is also found in the river. Its habits resemble those of *Sterna minuta* at home. I observed specimens in May 1875 at Montevideo, and in April of the present year at Baradero. Iris wood-brown; beak and legs pale orange.

138. LARUS DOMINICANUS, Licht.; Scl. et Salv. *l. s. c.* p. 576.

Pretty common and generally distributed; but I have not seen it in the neighbourhood in the spring or summer. In the winter it wanders far inland.

139. LARUS CIRRHOCEPHALUS, Vieill.; Scl. et Salv. *l. s. c.* p. 578.

I have not observed this bird to the south of Buenos Ayres, but have constantly seen it from March to July to the north of the city. Unlike *Larus maculipennis*, it never wanders inland, but frequents the shallow shores of the La Plata, feeding on dead fish or offal, and flocking round the fishermen when they are hauling their nets to get a share of the spoil. As a rule, this species does not mix with *Larus maculipennis*, though now and then they are seen together; but all the flocks or parties I have observed when flying from one spot to another have always been composed of birds of its own kind. Adults, after once attaining their pearl-grey hood, never lose it, though in winter it becomes rather lighter, and those with white heads are immature birds, which do not attain their full plumage till after their second moult. I have seen many birds throughout May and June of the present year with well-defined dark grey hoods. Some specimens, when first killed, have a delicate faint pink tinge on their underparts, also observed in *L. maculipennis*, which, however, quickly fades after death. The colour of the iris varies a good deal in different examples, being pale grey, grey with a tinge of yellow, and grey with a tinge of light wood-brown. This is probably attributable to age. The narrow rim of naked skin round the eye is dark coral-red; legs and feet the same, but of a duller shade; beak rather darker than the legs.

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* [In our paper on Neotropical Laridæ we have shown that this species is found as far north as Santa Catherina, Brazil (P. Z. S. 1871, p. 570).—EDD.]

140. Larus maculipennis, Licht.; Scl. et Salv. Nomencl. p. 148.

Common in the neighbourhood, except in the spring. After their second moult they attain adult plumage; previously to that they very much resemble the young *Larus ridibundus*. Their times for moulting and changes of plumage are very curious. I have observed and shot adult birds in April, May, and June in what is usually considered winter plumage, viz. with a white head and black spot behind the eye, and from June to October with perfect black hoods. It is impossible to establish any thing like a hard and fast line on this subject; for I have seen adult birds in the same flock, some with white and others with smoke-brown heads. Their moults probably take place in January and February and June and July; but this doubtless depends a good deal on the age of the bird.

This Gull was common about Baradero in April; and one fine warm evening, whilst steaming down the "riacho," I saw a curious sight: a considerable flock of Black-headed Gulls were hawking over some low marshy ground with Swallow-like flight, apparently in pursuit of some sort of moth; for they kept about a foot above the ground, never wandering far from each other.

141. Æchmophorus major (Bodd.); Scl. et Salv. Nomencl. p. 151.

Common, except during spring and summer. They are found both singly and in small parties. During a severe fog which we had in June last many were killed quite close to the city. I observed this Grebe near Montevideo in May, and at Baradero in April.

142. Tachybaptes dominicus (Linn.); Scl. et Salv. *l. s. c.*

Resident and common in lagoons and "arroyos." The female is not quite so brightly coloured as the male, and the elongated feathers on the head are shorter than in that sex. In rapidity of diving it rivals the little Dabchick at home. A few at Baradero in April.

143. Rhynchotus rufescens (Temm.); Scl. et Salv. Nomencl. p. 153.

Was formerly common here; but now it is necessary to go a hundred miles from Buenos Ayres to meet with them.

144. Nothura maculosa (Temm.); Scl. et Salv. P. Z. S. 1868, p. 143.

Resident and abundant wherever the rough paja-grass or thistles afford any cover. It also frequents fields of maize or other cereals in considerable numbers. On a Sunday or holiday it is a curious sight to watch the "sportsmen" of various nationalities flocking to the different railway-stations to have a day's "perdiz" shooting. The dogs impressed into their service on these occasions are, like their masters, of various breeds, from a bull-terrier to a pointer, it being considered of primary importance to be accompanied by some specimen of the canine race.

XVII.—*On a new Form of Reed-bird from Eastern Asia.*

By R. Swinhoe, F.R.S. &c.

(Plate IV.)

In 1863 Mr. Blakiston, who was then in England, gave me a skin of a bird which he had shot in Canton. The specimen, unfortunately, had no tail; but I took it and carefully compared it with skins in the East-India Company's Museum, and came to the conclusion that it represented a second species of Hodgson's genus *Tribura*, of which the type is *Tribura luteiventris* of Nepal. I consequently described it in the 'Proceedings' of the Zoological Society of that year as *Tribura squamiceps*. On the 8th of May, 1866, I received among a lot of birdskins from Takore, Formosa, a second specimen of this species, which my hunters had procured in the mountains in the interior of that district shortly after my departure for Amoy. This skin was sufficiently perfect to show that the bird had a short graduated tail, and not a long tail, as *Tribura*.

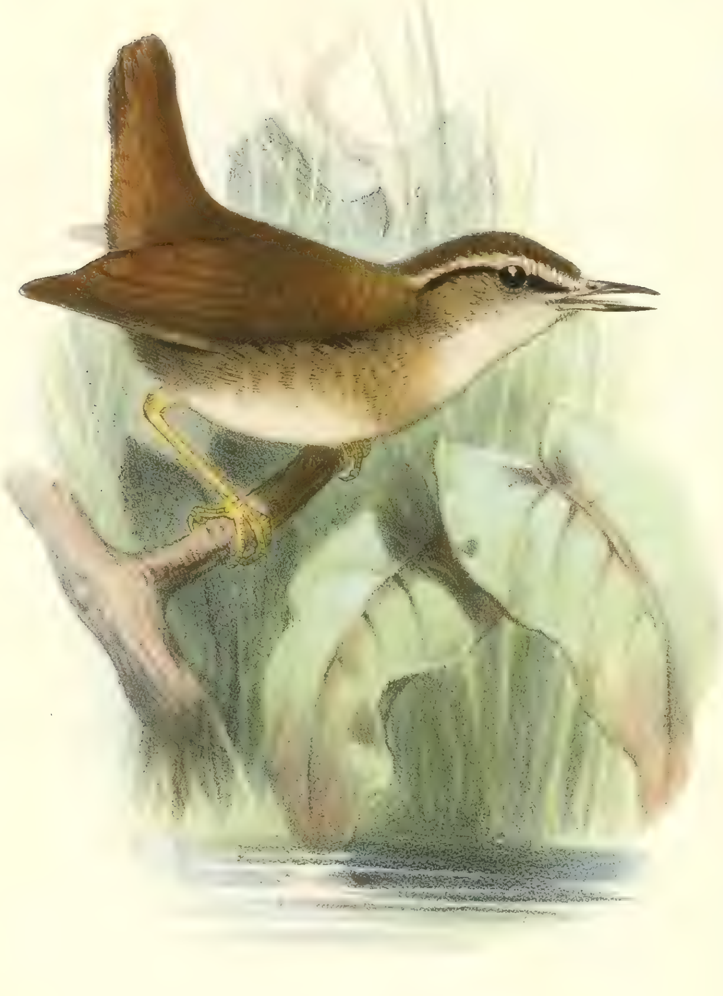
I never met with this species in China myself; but as I was leaving Chefoo on the last occasion, I received from Mr. Blakiston my third specimen, which he had procured at Hakodadi, Northern Japan, in May 1873. This specimen had nearly a complete tail (see Ibis, 1874, p. 155).

M. Taczanowski, of Warsaw, under date 9th November, 1875, transmitted to me a fourth specimen of the same bird from the Ussuri district. This is a male, shot on the 25th of September. I have the species therefore from Canton, Formosa, Hakodadi, and now from Manchuria, which, I think, proves pretty well that it is a regular migrant, coming north in summer to breed.

Mr. W. E. Brooks, who is now at home, writes to me from near Newcastle saying that he believes that he has an example of this same species, which was procured in Tenasserim. Mr. Brooks encloses me a good drawing of his specimen, which confirms his identification.

Mr. Brooks urges me to have a figure of this bird published, and to assign to it the characters of a new genus, as he considers that it does not belong to *Tribura, Pnoepyga, Horornis,* or any other known genus, though it has certain characters in common with them. I think, therefore, that it would be as well to propose for it the generic name *Urosphena,* from its wedge-shaped tail, and to characterize it as follows :—

AMERICAN MUSEUM
CENTRAL PARK,
NEW YORK.
OF NATURAL HISTORY.



[illegible] [illegible]

[illegible]

Bill at base exceedingly slender and much depressed. Wing of unusual power for such a little bird. Tail almost as in *Pnoepyga*, but somewhat more rounded. Style of coloration scaly, as in *Pnoepyga*. Legs and feet large, strong, and coloured as in *Horornis*. Lower tail-coverts very long.

Mr. Brooks says, "I do not know of any genus in which this little bird can be placed: the scaly plumage separates it from *Horornis, Neornis*, and *Tribura*. This, with its queer short tail, brings it near *Pnoepyga*; but the bill is as slender as in *Troglodytes*, or more so, and the wing is quite unlike that of *Pnoepyga*. I wonder whether *ten* tail-feathers is the correct number; that is the number in my specimen, which appears to be perfect."

The synonymy of this bird will stand as follows:—

UROSPHENA SQUAMICEPS. (Plate IV.)

Tribura squamiceps, Swinhoe, P. Z. S. 1863, p. 292; Ibis, 1866, p. 397, et 1874, p. 155.

Hab. Canton (*Blakiston*); Formosa (*Swinhoe*); Hakodadi, Japan (*Blakiston*); Ussuri district, Manchuria (*Taczanowski*); Tenasserim (*Davison*).

The figure (Pl. IV.) is taken from the specimen from Formosa: a view of the lower surface of the tail-feathers is given below the main figure.

[Since this paper was received I have been able, by Mr. Brooks's kindness, to compare the Tenasserim specimen of this bird with Mr. Swinhoe's type. I find them obviously identical, the former only showing more clearly the extreme slenderness of the bill. The Tenasserim skin belongs to Mr. Hume, and was obtained at Bankasoon, in the Malewoon district, in March 1875, by Mr. W. Davison. It is marked ♀. The legs, feet, claws, and gape, with two thirds of lower mandible from gape, are noted as "fleshy white; upper mandible and rest of lower mandible horny brown; irides dark brown."—P. L. S.]

XVIII.—*A few Observations on some Species of* Anthus *and* Budytes. By W. Edwin Brooks.

Anthus blakistoni, Swinhoe = *A. neglectus*, Brooks.

This Pipit was first described by Mr. Swinhoe (P. Z. S, 1863, p. 90). The description is correct as far as colour of plumage is concerned; but the bird's legs and feet are conspicuously lighter in colour than those of *Anthus spinoletta*. My term of "brown" is better than Mr. Swinhoe's of "blackish brown." The legs and feet of Mr. Swinhoe's examples, however, may have dried rather dark. I noted the colour from the fresh birds. The total length given by Mr. Swinhoe is clearly wrong; so also with regard to length of wing. I have shot about forty examples; and the greatest total length observed was 6·3, the longest wing 3·4, longest tail 2·65.

In the 'Proceedings' of the Zoological Society for 1871, p. 365, Mr. Swinhoe referred his *A. blakistoni* to *A. spinoletta*; and Mr. Dresser, in his 'Birds of Europe,' repeated the identification. This I accepted as correct; and knowing that my *Anthus neglectus* was as distinct from *A. spinoletta* as one Pipit could well be from another, I described the former as new in 'The Ibis' for October 1876, p. 501.

The fall of *Anthus seebohmi* led me to think further about my Pipit; and a few days ago I saw Mr. Swinhoe, who kindly showed me his specimen of *Anthus blakistoni*. This I found, beyond all doubt, to be identical in size and colour with my *A. neglectus*, which name must therefore sink to the rank of a synonym.

I was able to show Mr. Swinhoe a good series of my bird, sufficient to convince him that *Anthus blakistoni* is a smaller Water-Pipit than *Anthus spinoletta*, and differently marked on both the back and the breast.

A third good species of Water-Pipit is *Anthus japonicus*, T. & S. This is a large bird like *A. spinoletta*, the back greyish and indistinctly marked; but its breast is much tinged with reddish buff, and the spots are large and beautifully distinct. *Anthus spinoletta* and *A. blakistoni* lose their breast-spots in full breeding-plumage; certainly the male does; but

A. japonicus, judging from the examples I have seen, appears to retain them. The breast of immature *A. japonicus* is still more boldly spotted than in the mature bird, and in this respect rivals the well-marked *Anthus maculatus*, Hodgs.; the breast, however, possesses none of the warm tint of the adult, but is of a pale ochraceous-white ground-colour. These remarks apply to the one immature bird I saw in Mr. Swinhoe's collection; others may vary.

The voice of *Anthus blakistoni* is very like that of *A. pratensis*. In India the bird is only to be found in marshy localities in the north-west, and not at all in Bengal, so far as I know. Of its song I know nothing, as it leaves India in March, while the birds are still in small flights.

Budytes taivanus, Swinhoe, Ibis, 1870, p. 346, P. Z. S. 1871, p. 364.

Unlike *Anthus blakistoni*, this good species has not been suppressed. It is a most remarkable *Budytes*; and its long strong bill alone renders it distinguishable from every other species. It is a much darker-toned bird above than any of the other four green-backed *Budytes*; and the head in breeding-plumage is of a rich dark olive; the broad supercilium is of a very deep yellow, and the cheeks are uniform blackish olive-brown; lower surface deep yellow, not so brilliant as in *B. flavus* and the other three allies, and much washed with dusky on the sides and flanks. The tail is fully a quarter of an inch shorter than in *B. rayi*, the outer feathers nearly all white, and the penultimate diagonally marked with white, having the greater portion of the inner web brown. There is no white on any other tail-feather of the six examples examined. The bills at front measure respectively ·5, ·5, ·5, ·48, ·5, ·47. To the distinguishing points which Mr. Swinhoe has indicated, the long strong bill should be added.

With such good distinguishing marks, why should the green-backed *Budytæ* be singled out for confusion? If such nearly allied birds are to be lumped together, there is an end of ornithology as a science, and its greatest charm is gone. These allied species are difficult; but the difficulty should not be met by employing a fashionable theory which is baseless in face of existing facts, many of them only to be observed by the study of these birds in life. Now some forms of *B. flavus* are rather hard to separate (as skins only) from aberrant forms of *B. viridis* (*cinereocapillus*); but there are mature females of the latter never to be matched by any mature female of *B. flavus*. This the confounders of the two species do not know, or they would never dream of identity. Each species is subject to considerable variation; and very large series of each, together with a knowledge of the birds in life, are indispensable to a correct comprehension of them. For instance, a mature female of *B. melanocephalus* may have either a brownish-grey head or a black one, nearly as black as that of the male; and the colour of the lower surface is similarly variable, from white tinged with yellow to a moderately pure yellow, save the throat and breast, which are always pale in the female. The female *B. viridis* will carry the rather strong yellow right to the base of the bill; and this female possesses a brilliancy of lower surface not possessed by any other female of the green-backed *Budytæ* with which I am acquainted. The yellow abdomen of the female *B. flavus* changes to a sort of rufous tone on the breast; and this, with the broad brownish white supercilium, distinguish the species. Of the very distinct female *B. rayi* I need not say a word; but I have said enough to show that the study of the mature females confirms the entire distinctness of the several species.

The same great variation as regards the female is observable in *Budytes calcaratus*, Hodgs.; and here let me observe that *B. citreoloides*, Hodgs., is identical with *B. citreolus*, Pallas.

It is a question whether the paler females are young birds or not. The difference may be one of mere complexion, as in the Peregrines; but I have shot light-toned examples of *B. calcaratus* that would have laid their eggs certainly within the week. This was in Cashmere; and I searched long for the nests, but unsuccessfully.

I spent much time in ascertaining the mature female plumages of the five species of *Budytes* of India; and the investigation strongly confirmed their entire distinctness. With regard to the mature males, one fact requires notice. The mature *B. flavus* of Western Europe seldom, perhaps never, has such pale grey and white cheeks as the Indian examples have. The western birds are nearer to some forms of *B. viridis*; but the cheeks are not so dark as in that bird, and are streaked with white. The supercilium, too, of *B. flavus,* in the fresh bird, is broader and more distinct than in any form of *B. viridis,* which is oftener without than with a supercilium. In India the two species are much more distinct, and separation is always easy.

In skinning these birds the supercilium very often suffers, as well as the generally good condition of the head; this renders identification difficult when the head is the only guide.

I have been much struck by the careful details given by Mr. Blanford in his work on the Zoology of Persia. He gives:— 1. locality, 2. date, 3. elevation at which procured (this is important in a mountainous country), 4. sex, 5. total length, 6. colour of bill, legs, and feet. All this information is valuable; and if the collector be in ever so great a hurry, the one point of date, even to the day of the month if possible, should never be omitted. By this we can often tell whether the example is mature, and where the species breeds, to a certainty. Mr. Blanford knew all this; and hence the completeness of his details. I make these remarks in order to remind collectors of what will greatly add to the value of their specimens. These points are well known to most readers of 'The Ibis;' but some, in collecting, forget them. To register all these particulars may not be convenient, for want of time; but the month of the year should at all events not be forgotten.

XIX.—*Notes on a 'Catalogue of the* Accipitres *in the British Museum,' by* R. Bowdler Sharpe (1874). By J. H. Gurney.

[Continued from ser. 3, vol. vi. p. 493.]

Under the subfamily "Aquilinæ" Mr. Sharpe includes numerous groups, several of which differ so widely from each other that I greatly doubt its being desirable or, indeed, permissible to refer them all to the same subfamily. In dealing with these groups I shall endeavour to allude to them in what appears to me to be the most natural order of arrangement, which, in the main, will be the same as that adopted by Mr. Sharpe.

The genus *Gypaëtus*, with which Mr. Sharpe commences his series of Aquilinæ, forms so remarkable and peculiar a link between the Vultures of the Old World and the typical Eagles, that I am strongly of opinion that it ought to be considered as forming of itself a distinct subfamily, and that it should not be included in that of the Aquilinæ, amongst which it is comprised in Mr. Sharpe's volume. The account there given of the two species of *Gypaëtus* does not appear to require any comment, except to remark that in the summary of the localities inhabited by *G. barbatus*, "Northern Africa" ought to be substituted for "N.E. Africa," as the mountains of Algeria are the main African stronghold of the northern Læmmergeyer*.

Mr. Sharpe very appositely arranges the genus *Uroaëtus* consecutively to that of *Gypaëtus*; for of all the true Eagles, none so closely approaches the Læmmergeyer as the Wedge-tailed Eagle of Australia. From *Uroaëtus* he proceeds, and in this case also by a very natural sequence, to consider the most typical of all the Eagles, those which form the genus *Aquila*.

In treating of this genus Mr. Sharpe commences with *A. verreauxi*, a species remarkable not only for its very peculiar coloration, but also for its restricted geographical range; Mr. Sharpe defines this as "South Africa and North-east Africa;" but, speaking more precisely, it may be said to be limited to the mountainous districts of Abyssinia, and to similar localities lying to the south of the Orange River; and, so far as I am aware, it has never been observed in any of the intervening countries, or in any other part of the African continent.

Next in order to *Aquila verreauxi*, Mr. Sharpe arranges *A. chrysaëtus*, including under that name all those slightly varying phases of coloration which are incident to the Golden Eagle, and which perhaps are, in some cases, indicative (though this is by no means certain) of distinguishable geographical races. I am disposed to think that this is the wisest course, as the data which we at present possess in regard to these races do not seem sufficient to justify us in erecting them into separate subspecies.

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* I take this opportunity of calling attention to an interesting article on this species in Lieut.-Col. Prjevalsky's notes on the birds of Mongolia, recently published in Rowley's 'Ornithological Miscellany,' pt. 6, p. 137.

Golden Eagles vary considerably, not only in tone of colour, but also in size; and Mr. Sharpe, in a footnote to p. 237 of his work, refers especially to the large size of North-American and of Himalayan specimens; but my own impression is, that these variations in size are almost as often indicative of individual as of geographical peculiarities; and the following measurements of the wing from the carpal-joint, and of the tarsus, in examples from various localities, tend, I think, somewhat to confirm this view:—

Ascertained or Presumed Males.

	Wing.	Tarsus.
Largest of five North-American, measured by Mr. Ridgway*	24·5	3·8
Smallest of ditto	23·0	3·65
From Texas, in the Norwich Museum	22·3	3·5
From Scotland, measured by Macgillivray†	24·0	4·0
From south of France, in Norwich Museum‡	24·6	3·7
From Spain, in the Norwich Museum	24·7	3·8
From Spain, in the collection of Mr. J. H. Gurney, Jun.	24·1	3·5
From Algeria, in Norwich Museum	22·6	3·8

Ascertained or Presumed Females.

	Wing.	Tarsus.
Largest of seven North-American, measured by Mr. Ridgway*	27·0	4·2
Smallest of ditto	25·0	4·15
From North America, measured by Mr. Sharpe§	26·25	4·1

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* *Vide* 'North-American Land-Birds,' by Baird, Brewer and Ridgway, vol. iii. p. 315.

† *Vide* Macgillivray's 'British Birds,' vol. iii. p. 207.

‡ A specimen of the so-called *Aquila barthelemyi.*

§ *Vide* Sharpe's Catalogue, p. 237, footnote.

	Wing.	Tarsus.
From Labrador, in Norwich Museum	25·4	3·8
From Scotland, measured by Macgillivray*	26·5	4·5
From Scotland, in the Norwich Museum..	27·0	4·0
From Lapland, in the Norwich Museum ..	26·0	3·10
From south of France, measured by Mr. Hume†	27·63	4·38
From Algeria, in the collection of Mr. J. H. Gurney, Jun.	25·2	4·0
From Greece, in Norwich Museum	25·6	3·9
From the Himalayas, in the Norwich Museum	27·8	4·0
From Hazára district of the Punjáb, presented by Captain Unwin to the British Museum, and measured by Mr. Sharpe ..	27·9	4·0

Messrs. Baird, Brewer, and Ridgway, in their work on the land-birds of North America, from which I have quoted some of the measurements just given, state that the American Golden Eagle, as compared with that of the Old World, "is darker in all its shades of colour, the difference being most marked in the young plumage, which, in var. *chrysaëtus*, has the tarsal-feathers nearly white, and in var. *canadensis* light brown, the brown of other portions being also considerably darker;" Mr. Sharpe, on the contrary, remarks "I cannot separate *A. canadensis*, the old birds of which appear to be undistinguishable; the young ones from America wear a peculiarly light plumage on the head and neck."

To me it appears that the only difference between the Golden Eagles of the Old and New Worlds which at all approximates to a constant distinction, is that in the colour of the tarsi in young birds; and even this does not seem to be regulated by an invariable rule. The immature male from Texas in the Norwich Museum, of which I have given the measurements above, and the locality for which rests on the testimony of the late Jules Verreaux, has the tarsi and the inside of the thighs white*, whilst, on the other hand, I have examined five Old-World specimens which are characterized by the white base of the tail, indicative of immaturity, but which all have brown tarsi. As, however, they are none of them nestling birds, it is of course possible (though I hardly think it probable) that the tarsi in these specimens may have been originally white, as they undoubtedly are in the great majority of young European examples, and may have become brown previously to the white band having ceased to exist on the base of the tail. The specimens to which I here refer are:—one from Lapland and one from the Himalayas, both of which are in the Norwich Museum; and three in the British Museum, one of which is merely recorded as from India, a second from Nepal, and the third from the Hazára district of the Punjáb, the last-named specimen having been brought up from the nest by Captain W. H. Unwin, who has carefully recorded its progress towards maturity in the P. Z. S. for 1874, p. 210. Captain Unwin speaks of this bird as having originally had white down on the tarsi, but apparently not white feathers; this specimen was taken from the nest on the 13th of May, 1871, and died in the autumn of the following year: the exact date of its death is not given by Captain Unwin; but I gather from his account that it was then about sixteen months old. On the 1st of August, 1871, Captain Unwin made the following note respecting this nestling:—"Has grown a great deal during the past month, and has everywhere assumed the dark brown plumage shown in his mother, except on the inner and lower part of the thighs and tarsi, where a good deal of white down remains uncovered; the head has assumed its full covering of lanceolate golden chestnut feathers, and the same colour is apparent on the shoulders and in front of the thigh-coverts; it is everywhere of a darker and richer shade than its mother, owing probably to its not having been exposed to the weather." This Eagle and its mother are now preserved in the British Museum, and are certainly the most richly coloured Golden Eagles that I have ever seen from any locality. They are both of them very dark-coloured birds; and some of the newly acquired feathers of the young one approach more nearly to an actual black than those of any other specimen which I have examined. These birds are also especially noticeable for the colouring of the thighs, which are deep purplish brown on their outer, and rich rufous on their inner sides, the latter being also the colour of the tarsi, as well as of the under-tail coverts; the abdomen is of a dark hue, not materially differing from that of the exterior surface of the thighs. The striking manner in which the peculiarities of colouring seen in the old bird are reproduced in its offspring is, I think, particularly interesting.

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* *Vide* Macgillivray's 'British Birds,' vol. iii. p. 207.

† *Vide* Hume's 'Rough Notes,' p. 141.

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* Since the above was written Mr. Salvin has been so good as to send me the following memorandum respecting an immature Golden Eagle from North America in the Cambridge Museum:—"It has the tarsi and basal half of the tail of a dirty creamy white colour, the former being much paler than in the adult bird."

The British Museum also possesses a very similarly, though rather less deeply coloured specimen, which formed part of Major-General Hardwicke's Indian collection.

Whilst on the subject of the variations of colouring to which the Golden Eagle is subject, I must not omit to refer to the quotation from the writings of Mr. N. A. Severtzoff, for which we are indebted to Mr. Dresser*, and which seems to imply that, in the opinion of that eminent Russian naturalist, there exist in Central Asia and in the Southern Ural Golden Eagles in which the white base of the tail, elsewhere an indication of immaturity, is a permanent character. Of the correctness of this opinion I am not in a position to judge; but I have ascertained, by the examination of specimens, that the white on the base of the tail of the Golden Eagle disappears with the advance of age in the following countries—North America, Scotland, Sweden, France, Spain, and Greece. I have also seen two Asiatic specimens (Captain Unwin's Hazára female, and the female obtained in India by Major-General Hardwicke, to both of which I have already alluded) in which there was no white on the rectrices beyond a very slight mottling on the inner webs.

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* *Vide* Ibis for 1875, p. 100.

Of all the aberrations of colouring incident to the Golden Eagle, the most curious appears to me to be that upon the possessors of which the appellation of *Aquila barthelemyi* has been bestowed; and I regret that I am not able to add any information to that which I have already recorded on this subject in 'The Ibis' for 1864, p. 339, and in the P. Z. S. for 1870, p. 81. I may, however, mention that the Algerian example alluded to in the former of these papers possesses the white shoulder-patch on one side only, in which peculiarity it resembles a German specimen recorded at page 35 of the 'Richesses Ornithologiques du Midi de la France.'

In 'The Ibis' for 1866, p. 422, I quoted an incident confirmatory of the statements of Pennant and Atkinson relative to the competency of the Golden Eagle to attack the Wolf; and I take this opportunity of calling attention to two recent notices referring to this subject—one from the pen of Captain J. Biddulph, which will be found in the 'Proceedings of the Royal Geographical Society' for August, 1874, at p. 425, the other from that of Mr. J. Scully, at p. 123 of 'Stray Feathers' for 1876*.

In conclusion I may mention that I possessed for several years an adult living specimen of the Golden Eagle in which the iris, instead of being of the usual rich hazel-brown, was of a dull pale yellow, exhibiting an aberrant coloration resembling that which sometimes occurs in the iris of *Buteo vulgaris*.

I now propose to consider three nearly related Eagles which Mr. Dresser has distinguished in his 'Birds of Europe' by the English names of Imperial, White-shouldered, and Steppe-Eagles; and I am glad that the circumstance of Mr. Dresser having so recently published almost all that can be said in addition to Mr. Sharpe's account of these three species, renders it needless for me to dwell upon them at so great a length as might otherwise have been requisite.

Mr. Sharpe applies to the Imperial Eagle the specific name of "*heliaca*;" but I agree with Mr. Dresser in believing that this species is entitled to the earlier appellation of "*mogilnik*," which Mr. Sharpe appropriates (I venture to think, erroneously) to the Steppe-Eagle, as to which question I would refer to my remarks in 'The Ibis' for 1873, p. 99.

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* [See also Dr. Finsch's note, *anteà*, p. 50.—Edd.]

The most westerly locality assigned by Mr. Sharpe to the Imperial Eagle is "Central Europe," which I am disposed to think is probably accurate, although Mr. Dresser remarks that "in Southern France, according to Jaubert and Barthélemy-Lapommeraye, it has occurred several times; and on referring to the plate published by those gentlemen, there appears no doubt that the species represented is the present, and not the White-shouldered or Spanish Imperial Eagle." My copy of the 'Richesses Ornithologiques du Midi de la France,' by the authors whom Mr. Dresser quotes, does not contain a plate of the Imperial Eagle; and the description there given does not appear to have been taken from a French specimen, only one such adult example being mentioned by M. Jaubert and his colleague, which was in a private collection at Bayonne, and which they appear not to have personally examined; I therefore do not consider it by any means certain that this species has really occurred in France, or that the French specimens referred to it may not, in fact, have belonged to *Aquila adalberti*, in which case the very few stragglers recorded in Mr. Dresser's work as having been obtained in Pomerania and Silesia are probably the most western known examples of the true Imperial Eagle. Mr. Sharpe does not refer to the occurrence of the Imperial Eagle in North-eastern Africa; but a summary of what is known on this head will be found in Mr. Dresser's article on this species.

Mr. Dresser figures a fine adult pair of Imperial Eagles, the female* of which, through the kindness of Mr. W. E.

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* Mr. Brooks has favoured me with the following graphic account of the capture of this specimen:—"It was rather a barren, open, sort of country where I saw her perched on a low half-dead tree. I made two or three attempts to get within shot; but she always ducked her head and flew before I was within a hundred yards. On the last occasion she began to soar a little, and then took a steady flight to the west at a height of about two hundred yards. I kept her in view with my glasses, and at last saw her shoot to the ground with closed wings. As she knew a European so well, I handed my gun, loaded with BB, to my native attendant,

Brooks, now forms part of the collection at the Norwich Museum. But that collection also contains another specimen, the locality of which is unfortunately unknown, which has a still greater development of white on the scapulars—in fact, nearly as much as is represented in the figure of the adult bird given im Mr. Gould's 'Birds of Europe.'

Mr. Dresser's excellent article on this species contains much interesting information respecting it, gathered from various sources; but it may be desirable to call attention to some valuable notes on this Eagle, as observed in Turkey, to which Mr. Dresser has not referred; these are from the pen of MM. Alléon and Vian, and will be found in the 'Revue et Magasin de Zoologie' for 1869, p. 108, and for 1870, p. 83*.

Dr. Bree, in the first volume of the second edition of his 'History of the Birds of Europe,' at p. 70, also gives some interesting additional particulars respecting the Imperial Eagle, supplied to him by Mr. A. S. Cullen of Kustendji; and at p. 96 of the same volume he figures, under the name of "Striated Eagle," two specimens sent to him from Kustendji by Dr. Cullen, which, so far as I can judge from an examination of the skins, are immature examples of the Imperial Eagle, but which Dr. Cullen, for reasons quoted by Dr. Bree at pp. 65, 66, 67, 97, and 98 of his first volume, affirms to be specifically distinct†.

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enjoining him to put off his dark jacket and turban. Having a light-coloured blanket with him, he tied a large knot at one corner, and making use of this temporary cloak, which hid the whole man and his gun, he proceeded to stalk her: as he neared the place she flew up from the long grass and perched on a low dead tree, and allowed him to get within easy shot. After she was shot we went to the spot from which she had risen and found a *Coracias indica*, with most of the body eaten; I did not think such a large bird would have taken such small prey." The circumstance mentioned by Mr. Brooks of this large Eagle pouncing on a Roller seems to me to be very remarkable and worthy of record.

* These valuable papers have been already alluded to in 'The Ibis' for 1870, p. 60, and for 1871, p. 418.

† An instance of an Imperial Eagle having been kept in confinement for seven years "without losing the striated plumage of the young bird" is recorded by Messrs. Danford and Harvie Brown in 'The Ibis' for 1875, p. 294. I think there is little doubt that in this case, and in another

For the last five years a very interesting Chinese specimen of the Imperial Eagle has been living in the Gardens of the Zoological Society of London, to which Dr. Bree refers at pp. 73 and 99 of his work, and respecting which I at different times made the following memoranda :—

"15th July, 1871. A young Imperial Eagle from Foochoo, China, has lately been purchased by the Zoological Society, for whom a drawing has been made of it; it is in striated plumage, just similar to a striated specimen lately sent over by Dr. Cullen from Kustendji, and has the irides very pale yellowish grey."

"22nd June, 1872. It appears darker in plumage than at first, but is not otherwise changed."

"22nd November, 1872. It is now in good plumage; striations very marked; irides now pale clear yellow."

I did not preserve any memoranda respecting my own observations of this Eagle during the two following years; but on the 26th June, 1874, I received the following account of it from Mr. Howard Saunders :—"It is only now showing black feathers and getting the barred tail, with one white feather on the left scapular." On the 23rd February, 1875, I made the following memorandum after again visiting it :—"Still chiefly in striated plumage; but the white scapulars are becoming conspicuous; it now resembles the figure of a striated young bird beginning to change and showing white scapulars, given in drawing No. 8 of Col. Tickell's MS. Indian Ornithology, in the library of the Zoological Society." And on the 14th August, 1876, I made the following note :—"The Foochoo Eagle may be said to have attained adult plumage on the scapulars, which largely show the white, and also on the tail; but it retains immature dress on the head, neck, rump, and wing-coverts; the iris is light, clear pale yellow."

Passing on to the consideration of *Aquila adalberti*, the white-shouldered Eagle of Spain, I may mention that I en-

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similar one, recorded by the same gentlemen, the phenomenon was due to the effect of confinement; but these instances are nevertheless extremely curious.

tirely agree in the opinion expressed by Mr. Dresser in the P. Z. S. for 1872, p. 864, and subsequently confirmed in his article on this Eagle in the 'Birds of Europe,' that "it is a very distinct species from the Imperial Eagle of Eastern Europe and India;" its distinctness is also fully recognized in Mr. Sharpe's volume.

The coloration of *A. adalberti* in its nestling plumage is absolutely similar to the typical coloration of *A. rapax* (*nævioides*) at the same age; and widely as these two species differ in their adult dress, the typical *A. rapax*, on first leaving the nest, can only be distinguished from the nestling *A. adalberti* by its smaller size. The distinction, however, is always apparent on a comparison of birds of the same sex, but not otherwise; and where the sex of the specimen is unknown, I believe there is always the possibility of a young male *A. adalberti* being mistaken for a young female *A. rapax*, and *vice versâ*. Nor does the coincidence of coloration end here; for *A. adalberti*, in its second stage, exhibits a somewhat particoloured plumage on the mantle and breast, two different shades of rufous brown frequently appearing side by side on the same feather; and in this state of plumage it bears a decided resemblance to the fully adult dress of *A. rapax*.

Mr. Sharpe's description of the young female *A. adalberti* appears to have been taken from a specimen little, if at all, removed from the nestling-stage; but Mr. Dresser, in his 'Birds of Europe,' describes one, apparently slightly older, as having the "head, neck, back, scapulars, and wing-coverts light sandy brown, here and there intermixed with darker brown and dull rufous feathers." Two specimens in which this intermixture has made some further progress are figured from the life, in the second edition of Dr. Bree's 'Birds of Europe.' These birds, a male and a female, were brought from Spain by Lord Lilford, having been taken from the nest in the pine-forests near the mouth of the Guadalquivir during the first fortnight of May 1872; by the kindness of Dr. Bree they came into my possession on the 10th December, 1873, the drawing from which Dr. Bree's plate was taken having been made just previously. I still have this fine pair of Eagles in excellent health, and have at various intervals made memoranda respecting their changes of plumage, from which I select the following:—

On their first arrival I made a note to this effect:—"They are in the plumage of the young bird figured in Mr. Dresser's 'Birds of Europe' on the same plate as the immature *A. mogilnik,* except that a few dark feathers are appearing on their foreheads, and also on one thigh of the female; a few small pure white marks are also visible on the female about the carpal joint."

On the 25th May, 1874, I noted that "the pair of Eagles have become dark on the crown of the head, also on the primaries and secondaries, as well as on the centres of the feathers forming the wing-coverts, the edges of these feathers being yellowish white"*. On 13th June, 1874, "the female shows a considerable amount of white feathers about the carpal joint, and some dark ones on the thighs and on the under surface of the wings; the male remains much as on 25th May." On 6th August, 1874, "the male begins to show white at the carpal joint." On 24th November, 1874, "the female has now almost one third of her plumage consisting of the new dark brown feathers, and the male nearly as large a proportion; the white about the carpal joint is much the same in the female as on the 13th June, and in the male as on the 6th August." On the 5th February, 1875, "the male has now almost as much white about the carpal joint as the female, no other change noticeable in either bird since 24th November."

On the 11th June, 1875, I observed in both the Eagles a considerable, but irregularly distributed, increase of new dark plumage, and also some increase of the white adjacent to the carpal joint; and the gamekeeper who has the charge of them, and who is a very intelligent observer, had noticed that for a fortnight previous to this date, they had been moulting fast, this being, with the exception of a few feathers occasionally dropped, the first appearance of a regular moult since the birds had been in my possession, and no moult, beyond the isolated droppings of occasional feathers, having occurred subsequently.

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* This state corresponded with that to which I have previously alluded as the "second stage."

On 13th July, 1875, I noted :—"the female now shows a very considerable quantity of white, both about the carpal joint and on the ridge of the wing near the shoulder; and the male shows the white at the same points, but less conspicuously." On 23rd September, 1875, "the white on the wings of the female has slightly increased since 13th July, and on those of the male considerably so; but the female is still by much the more advanced of the two in this respect."

During the succeeding eight months little, if any, alteration occurred in the plumage of either of the Eagles; but during the next six months, ending about 30th November 1876, the male bird gradually became as much advanced in his change as the female; and both birds had, by that date, assumed the full adult dress, with the exception of isolated feathers belonging to the immature plumage, which remained here and there scattered over the mantle and thighs, and to a less extent on the breast and abdomen. Since then ten weeks have elapsed; but no further change is observable, except that the female has now almost entirely lost the old feathers of the immature plumage from the breast and abdomen.

It will be seen by the above notes that the female of this pair of Eagles has constantly made a more rapid advance towards the adult plumage than the male, which I have been disposed to attribute to the fact of his being literally a henpecked husband, and probably not always, in consequence of this, obtaining his full share of food; I have, however, read, but where I cannot now recollect, that in the case of the Eastern Imperial Eagle the female has been observed, when in a state of nature, to assume the adult dress more rapidly than the male.

I have now to refer to the Steppe-Eagle, respecting which it will be the less necessary for me to add much to Mr. Sharpe's account, as the natural history of this Eagle has of late years been ably and exhaustively elucidated by Messrs.

Brooks and Anderson in India as well as by Mr. Dresser in this country.

When I last referred in print to this subject (*vide* Ibis, 1873, p. 422) I was of opinion that the Steppe-Eagle of Eastern Asia and India should probably be considered specifically distinct from that of Eastern Europe, the latter being, on the average of specimens, decidedly smaller, for instances of which I would refer to Mr. Dresser's paper in the P. Z. S. for 1873, at p. 516; but I am now disposed to acquiesce in the view which has been taken by all the four ornithologists above referred to, that this disparity of size is not sufficient to constitute a specific distinction; and assuming this view to be correct, I agree with Mr. Dresser in considering "*nipalensis*" of Hodgson to be the correct specific name to apply to the Steppe-Eagle both of Asia and of Europe.

I have already mentioned my dissent from Mr. Sharpe's application of Gmelin's name of "*mogilnik*" to this species; but I may here observe that, previously to Mr. Sharpe having so applied it, a similar appropriation of it to this Eagle was made by M. Alléon in the 'Revue et Magasin de Zoologie' for 1866, accompanied by a figure (pl. 20) of a specimen obtained on the Bosphorus, which, contrary to the opinion of M. Alléon, I believe to be fully adult. In subsequent papers, written jointly with M. Vian*, M. Alléon ceases to identify the Steppe-Eagle with *Aquila mogilnik*, Gmel., and treats it as identical with *A. clanga*, Pallas. I think it is by no means impossible that Pallas did not distinguish between the usually smaller occidental form of the present species and the larger Spotted Eagle; but the description of his *Aquila clanga* applies better to the latter, with which Mr. Sharpe identifies it, and, on the whole, I believe, correctly.

MM. Alléon and Vian also express the opinion that the Steppe-Eagle of Eastern Europe is not specifically distinct from *Aquila nævioides* of Cuvier, or, as it may be more correctly termed, *A. rapax*; this is an opinion which I at one time believed to be correct, but am now convinced is erroneous, as I have already explained in 'The Ibis' for 1873, p. 422*.

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* *Vide* 'Revue et Magasin de Zoologie' for 1869, pp. 258, 311, 313, for 1870, pp. 81, 82, 130, and for 1873, pp. 235, 239.

The specimen of *A. nipalensis* described by Mr. Sharpe as an adult male is not, in my opinion, completely adult; the fully adult stage is, I believe, that which is succinctly described by Mr. Anderson (P. Z. S. 1872, p. 621) as of a uniform brown, with the addition of a fulvous-coloured nuchal patch†.

Mr. Sharpe, in his description of this species, does not refer to the peculiar transverse markings, extending from the sternum to the vent, which are occasionally to be observed in Indian specimens of this Eagle whilst in a state of change from the first immature dress to the fully adult plumage: for a fuller description of this stage, which I have not yet met with in European examples, see my remarks in 'The Ibis' for 1873, p. 99, and those of Mr. Anderson in P. Z. S. 1875, p. 21.

The papers of MM. Alléon and Vian, to which I have already referred, contain many interesting particulars respecting the migration of this and other Raptorial birds, as observed in the neighbourhood of the Bosphorus. Space will not allow me to quote more than the following summary of the observations of those gentlemen relating to the present species:—"C'est lui qui ouvre, sur le Bosphore, les migrations du printemps; il paraît, dès les premiers jours de Mars, par bandes considérables, exclusivement formées d'oiseaux de cette espèce, ... mais le nombre en est beaucoup moindre à l'automne" (Revue et Mag. de Zool. for 1869, p. 313; *conf.* also Messrs. Buckley and Elwes in 'The Ibis' for 1870, p. 68).

Mr. Dresser, referring to these migrations in his article on this species in 'The Birds of Europe,' makes the following remark:—"I have no data as to its occurrence in Northern Africa, and am unable to say how far south those birds which are found passing the Bosphorus on their journey southward extend their range." It is certainly remarkable that African specimens of this Eagle should be so rare in collections as appears to be the case; I only recollect to have examined two, both, apparently, adult males: one of these is from Abyssinia*, and is preserved in the Museum at Brussels; the other was obtained in or near Damara Land by the late Mr. C. J. Andersson, by whom it was presented to the Museum at Norwich, where it still remains†.

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* In Col. Irby's paper on the birds of Oudh, in 'The Ibis' for 1861, at p. 221, *A. nipalensis* is referred to under the name of *A. nævioides*—a mistake for which I am accountable, having wrongly identified two specimens from Oudh which were presented by Col. Irby to the Norwich Museum.

† *Conf.* Anderson in P. Z. S. 1876, p. 313.

Besides the continent of Africa, the district of Upper Pegu must be added to the localities quoted by Mr. Sharpe for this species (*vide* 'Stray Feathers' for 1875, p. 25).

I am indebted to the kindness of Mr. W. E. Brooks for the following anecdote relating to *A. nipalensis* as observed in India:—"One of my men once shot a large female *A. nipalensis*, which, he said, had struck down a fox and partly eaten it; in the capture it was assisted by two other birds of the same species. . . . . Hodgson, in one of his notes, describes taking portions of a jackal out of the crop of one of these birds."

Some curious and valuable observations on the habits of this Eagle are also contained in Prjevalsky's Mongolian notes, to which I have already referred (*vide* 'Ornithological Miscellany,' pt. 6, p. 144).

The next three Eagles which I propose to notice are closely connected with the three last to which I have alluded, but are still more closely connected with each other. These are:—*A. rapax* (or, as it has been more frequently called, *A. nævioides*); *A. albicans*, which Mr. Sharpe and most other authorities treat as identical with *A. rapax*, but which I incline to think is separable as a subspecies; and *A. vindhiana*, which perhaps may be most properly considered also a subspecies, and which is connected with *A. rapax* by *A. albicans*, the latter occupying a position curiously intermediate between *A. rapax* and *A. vindhiana*, and thus forming one of those nicely balanced links which, though it is difficult to define, it is inaccurate to ignore.

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* Dr. A. Brehm's *Aquila raptor* ('Naumannia,' 1855, p. 13) appears to me, by the description given, to be probably identical with this species, although quoted by Mr. Sharpe as a synonym of *A. rapax*; Brehm's examples were obtained in the Bogos country, where, however, he only appears to have occasionally met with it.

† When I edited Mr. Andersson's notes on the birds of Damara Land, I was under the impression that this specimen was a dark variety of *A. rapax*, and therefore did not enumerate it as distinct from that species.

Mr. Sharpe, in his epitome of the habitat of *A. rapax*, includes North-western India; but the Eagle from that locality which, in common with Canon Tristram*, I referred in 1869 to *A. rapax*, I now believe to be referable to *A. fulvescens*, and to be specifically distinct both from *A. rapax* and from *A. vindhiana*: to this Eagle I shall have occasion hereafter more particularly to allude†. I believe it was this incorrect identification which led Mr. Sharpe to quote North-western India as a locality for *A. rapax*; and I regret the error which has thus obtained additional currency.

The adult plumage of *A. rapax* is well represented in Temminck's 'Planches Coloriées,' pl. 455‡, and in the upper figure in the plate accompanying Lord Lilford's paper on the ornithology of Spain in 'The Ibis' for 1865, pl. v. The immature plumage, but with a slight commencement of change on the wing-coverts, is represented in the lower figure of the same plate, and also in the figure of the "Tawny Eagle" given in Dr. Bree's 'Birds of Europe'§; but neither of these two figures appears to me sufficiently to indicate the somewhat pale, but clear and decided, fulvous tint which characterizes the mantle and under surface of *A. rapax* in immature plumage, and which was well described by the late Sir A. Smith in the following sentence :—" The young are of tawny chestnut colour, and without the brown variations observed in the old "*.

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* *Vide* Ibis for 1870, p. 290, footnote.

† Mr. Sharpe gives *A. fulvescens* as a synonym of *A. vindhiana*, but, I think, erroneously.

‡ Temminck's plate shows with great accuracy the character of the particoloured feathers, which are remarkable on the wing-coverts of the typical South-African *A. rapax* in its adult stage; but his figure does not sufficiently exhibit the similar markings which usually exist on the scapulars and, to a less extent, on the back and sides of the neck and on the upper breast.

§ This figure is more accurately coloured in the second edition of Dr. Bree's work than in the first.

Aquila rapax appears to be the commonest Eagle in the colony of the Cape of Good Hope; and thence it has been ascertained to extend its range in a north-easterly direction to the Republic of Transvaal, and in a north-westerly to the Mossamedes district in Benguela †.

On the western side of the African continent, north of the equator, we meet with *A. rapax* at Senegal; and the British Museum possesses a typical example in immature plumage from that locality. Other specimens from Senegal, which are preserved in the Museum at Paris, are said to be identical with South-African examples ‡; but Professor Schlegel, in the 'Muséum des Pays-Bas,' vol. i. *Aquilæ*, p. 5, has the following footnote :—" Les individus originaires du Sénégal, que j'ai pu examiner, offrent en général des teintes un peu plus ternes que ceux de l'Afrique australe;" the same author, however, in his supplementary volume, *Accipitres*, p. 116, mentions a specimen of this Eagle, acquired by the Leyden Museum subsequently to the issue of his first volume, as " femelle aux teintes fauves, Sénégal."

Proceeding northwards, it would appear that *A. rapax* occurs in the neighbourhood of Mogador, as I understand from Lord Lilford that the two specimens figured by him in 'The Ibis' for 1865 were both said to have come thence.

What range *A. rapax* may have in those parts of North Africa which border on the Mediterranean I am unable to say, having only examined two specimens of Eagles of this group from there, both of which appear to me to be more nearly allied to *A. albicans* than to *A. rapax*, on which account I defer their consideration for the present.

* *Vide* 'Gardens and Menagerie of the Zoological Society Delineated,' vol. ii. p. 292.

† *Vide* second edition of Layard's 'Birds of Africa,' p. 35.

‡ *Vide* Hartlaub's 'Ornithologie West-Africa's,' p. 13.

In South-western Europe *A. rapax* appears to be extremely rare. Some years since I had the opportunity of examining the skin of an immature specimen, obtained in Spain by Lord Lilford, which was referred, and, I believe, correctly so, to this species; but most of the specimens from South-western Europe which were at one time supposed to belong to *A rapax* have been subsequently ascertained to be immature examples of *A. adalberti*; Lord Lilford, however, mentions having on one occasion seen an Eagle in Andalucia, which, unfortunately, was not obtained, but which, from the description given, would seem to have been an adult *A. rapax**.

In South-eastern Europe I am able to cite one unquestionable instance of the occurrence and nidification of *A. rapax*, which is referred to in a letter from Dr. W. H. Cullen in 'The Ibis' for 1867, p. 247, and in a subsequent letter from the same gentleman published in the second edition of Dr. Bree's 'Birds of Europe,' vol. i. p. 90; from these it appears that two nestling specimens were obtained by Dr. Cullen at Kustendji, in Turkey, in the spring of 1865, one of which remained in his possession till January 1868, when he presented it to the Zoological Society of Antwerp, in whose collection I saw it alive and in excellent feather on the 4th of September, 1876, when, through the courtesy of the authorities at the Gardens of the Society, I had the opportunity of carefully and fully examining it. The early history of this interesting specimen is thus given in Dr. Cullen's letter to Dr. Bree, above referred to:—"I had two birds half-fledged brought me; and as I was attracted by their colour (a light cream . . . .), I bought them: one died; the survivor is at Antwerp. The whole plumage was this delicate "fauve isabelle" silk down; and then it grew, gradually developing itself into an almost perfect copy of your *A. nævioides.*" The drawings and description of this Eagle, which in 1874 were sent from Antwerp to Dr. Bree, did not appear to me to agree with the typical *A. rapax*; and, partly in consequence of my expressing this opinion as regards the details given in the description, Dr. Bree provisionally proposed for this Eagle, should it prove to belong to an undescribed species, the name of *Aquila culleni*. Unfortunately the drawings sent from Antwerp to Dr. Bree appear to have been inaccurate in three important particulars; the description, moreover, did not altogether agree with the bird as it was when I saw it in September last: the nostril, which in reality is of the form usual in *A. rapax*, was represented as of a very different character; the tarsus, which is feathered down to the toes, was drawn as having its lower portion bare; and the broad scutes on the lower part of the toes do not extend in reality so far up on the middle and on the outer toe as the drawing indicates (*vide* Dr. Bree's engraving of details at p. 93). The tail was reported to Dr. Bree as being, in 1874, "without traces of bands or transverse spots;" but such was not the case when I saw it two years later. It was also stated at that period to be "very silent;" but during the time that I inspected it this was not so, as it continually uttered a croaking note, which much reminded me of that of a South-African *A. rapax* which I kept for many years in confinement.

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* *Vide* Ibis, 1865, p. 172.

The following memoranda as to the coloration of this Eagle were made by me on the spot, and, from the interest attaching to this specimen, may be worth inserting here:—"Iris hazel; cere, gape, and feet rather dull yellow; the crown of the head and back of the neck are bright rufescent fulvous, but with the rufous tint decidedly paler than in adult South-African specimens, and more resembling the colour of those parts in the South-African bird when immature; the ground-colour of the mantle generally is of a similar hue to the head and neck; but the interscapular and upper scapular feathers have darker shaft-marks, and are also tinged with greyish brown, which is darkest along the sides of each feather, forming a tolerably distinct border and producing a particoloured feather, in some cases with a slight fawn tip, and resembling in character the corresponding feathers in the adult South-African bird, but with the contrast of tints much less strongly marked; the lower scapulars are of a dark slaty brown, faintly tipped with fawn, and showing, in some lights, a purplish reflection; the wing-coverts, except those of the primaries and secondaries, are fawn-coloured, this tint being unbroken along the ridge of the wing, but elsewhere varied with a slaty-black centre to each feather, which become more conspicuous in proportion as they recede from the ridge of the wing; the primary- and secondary-coverts are slaty black, some of the inner webs being tipped with whitish, and all the outer webs with fawn-colour; all the quill-feathers of the wing are black, with a tinge of grey on the outer webs, and with fawn-coloured tips; the secondaries also show some dark but rather indistinct transverse bars; the upper surface of the tail is dark slate-colour, with eight transverse bars of a darker hue visible on the middle rectrices, these bars being less distinct, and assuming more the character of mottling, towards the sides of the tail; all the rectrices have narrow fulvous tips. The entire under surface is fawn-coloured, decidedly paler than the back, and with no dark markings, except a few narrow shaft-marks on the breast; the wing-linings and throat are paler than the rest of the under surface; and the chin is nearly white; but with these exceptions there is hardly any perceptible variation in the tints of the underparts."

It will be seen by the above that in this Eagle the general coloration is paler, and the contrast of tint upon the particoloured feathers much less marked, than in the ordinary typical adults of *A. rapax*, from which it also differs in the almost entire absence of variegation on the underparts. These peculiarities are remarkable, and the more so as the bird, when I saw it, was about eleven and a half years old; but I am disposed to regard them as resulting from confinement, having met with a similar phenomenon in a Mogador specimen recently presented by Lord Lilford to the Norwich Museum. This specimen, which was the original of the lower figure on pl. v. of 'The Ibis' for 1865, lived for nine years in Lord Lilford's possession, and in great measure retained its immature dress till it died, its plumage then exhibiting still less of the variegation of tint characteristic of the normal adult dress than was visible in the Antwerp specimen at the time when I saw it. Both these cases are probably parallel to those of the two Imperial Eagles which so long retained their striated plumage in confinement, and to which I have already alluded.

Before leaving the subject of the Antwerp Eagle, I may mention that some slight changes which occurred in its plumage between 1868 and 1874 are detailed by Professor Vanden-Nest in a letter which is printed at page 91 of the first volume of the second edition of Dr. Bree's work.

As regards the more eastern range of *A. rapax,* I have no information beyond the fact of its inhabiting Palestine and breeding there, which is recorded by Canon Tristram in 'The Ibis' for 1865, p. 252; I have never had the opportunity of personally examining an Asiatic specimen.

I will now refer to such facts as I have been able to collect relative to the Eagle inhabiting Abyssinia and the adjacent countries, for which Rüppell proposed the specific name of *albicans,* though he subsequently abandoned this for the older appellation of *rapax*[*], under which latter designation it is also referred to by two eminent subsequent explorers of Abyssinia, Blanford and Von Heuglin.

These Abyssinian Eagles do not differ from the typical *A. rapax* of South Africa in form or measurements[†]; and the question to be considered has therefore reference to coloration and markings only. On the former of these heads Mr. Blanford observes, "the plumage varies from umber-brown to rufous, the latter colour prevailing in adult birds, especially on the head and upper part of the back; old birds are whitish (*A. albicans,* Rüpp.)."

With regard to the last of these observations I may mention that the specimens which I have examined lead me to believe that the colour, or rather lack of colour, described by Mr. Blanford as "whitish," is less due to the age of the bird than to the age of the feathers, which frequently become much more colourless, by use and fading, in Abyssinian specimens of the Eagle which Rüppell called *A. albicans* than in ordinary South-African examples of the typical *A. rapax*.

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[*] *Vide* 'Neue Wirbelthiere,' p. 34, and 'Systematische Uebersicht,' p. 10.

[†] Dr. A. Brehm, who, in his interesting Notes on the Birds of the Bogos Country, recognizes *A. albicans* as distinct from *A. rapax,* considers the former to be the larger bird of the two (*vide* 'Naumannia,' 1855, p. 15); but I do not find that such is the case on an average of the specimens which I have examined.

The coloration of the Abyssinian race is thus described by Von Heuglin, for a translation of whose remarks on this subject the English reader is indebted to the good offices of Dr. Bree :—" Old birds from Abyssinia are almost uniformly of a grey isabel-colour, which latter tint gradually changes to a dull white; other birds from Eastern Sennaar and Western Abyssinia are generally, and especially underneath, of a greyish fawn-colour; on the breast, sides, shanks, and under tail-coverts are solitary, often very broad, reddish or smoky brown arrow-shaped spots, which sometimes run across the whole feather "*. Mr. Jesse thus refers to a pair of these Eagles shot by him in Abyssinia on 27th April, 1868 :—

" ♀. Iris brown, cere yellow, bill almost black . . . .

" ♂. Iris yellowish grey, cere dirty yellow; beak bluish grey at base, black at tip . . . .

" The pair above noted† were killed the same day, one on the nest, the other as he swooped down to look for his companion; these two examples sufficiently illustrate the variations to which this Eagle is subject, the female bird being almost entirely cream-coloured, and the male so brown as to be verging on black; the iris and beak are different in each; . . . . the remaining five specimens I got vary considerably, none, however, being so dark or so light as the pair above mentioned "‡.

It seems to me to be convenient to retain the distinctive appellation of *albicans* for the Abyssinian race of Eagles referred to in the above extracts, as the great majority of Abyssinian specimens exhibit a tone of colour strikingly different from that of the ordinary typical *A. rapax* of South Africa. The Abyssinian birds, when immature, present a general coloration of wood- or stone-brown (slightly tinged with purple on the lower scapulars), of a deeper tint on the upper than on the underparts of the bird, and much darker in some individuals than in others, but always (so far as I have seen) without any tinge of the fulvous colouring which is conspicuous on all parts, except the quill-feathers of the wing and tail, in the young *A. rapax.* The attainment of adult plumage appears to be signalized in *A. albicans,* as in *A. rapax,* by the acquisition of particoloured feathers on the mantle, and especially on the wing-coverts and scapulars, these variegations being disposed in a similar pattern in both races, except that in *A. albicans* they usually do not descend so far down on the scapulars as in *A. rapax.* In the majority of Abyssinian specimens, which are proved by this variegation to have attained adult plumage, no rufous colouring is anywhere visible; and in these examples the particoloured feathers, instead of presenting a pattern composed of alternations of deep brown with rufous or fulvous, as in the adults of *A. rapax,* exhibit the same pattern in two different shades of wood-brown, a darker and a lighter. Such specimens as these are readily distinguishable from the typical *A. rapax;* but other adults also occur in Abyssinia which show a considerable amount of rufous colouring on the head and upper part of the mantle, including the paler portions of the particoloured feathers; and it must be admitted that it is not easy, perhaps not possible, to distinguish with certainty between such Abyssinian specimens as these and the ordinary South-African adults of *A. rapax.* These rufescent Abyssinian examples, however, are very much scarcer in collections than those that are nonrufous; and the prevalence of the latter phase in Abyssinia, coupled with its almost entire absence in South Africa*, is a fact which ought not to be overlooked, whatever may be thought of the attempt to indicate its existence by the application of a distinctive specific name to the Abyssinian race.

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* *Vide* Bree's 'Birds of Europe,' 2nd edit. vol. i. p. 94.

† This pair of Eagles are preserved in the collection of the Marquis of Tweeddale.

‡ *Vide* 'Transactions' of the Zoological Society of London, vol. vii. p. 201.

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* I have only seen one non-rufous specimen from South Africa; this is preserved in the British Museum, and is marked "*m*" in Mr. Sharpe's list of specimens. It so closely resembles the ordinary Abyssinian type that I cannot but think it possible that it may have been an accidental wanderer from intertropical regions. The exact locality in South Africa in which it was obtained is, unfortunately, not recorded.

It should also be mentioned that the adults of *A. albicans* are, for the most part, less profusely variegated with dark longitudinal marks on their under surface than are those of *A. rapax*; but, on the other hand, they sometimes exhibit abdominal markings of a character which I have not observed in *A. rapax*. The most striking instance of this peculiarity which has come under my notice is displayed in a non-rufous specimen from Bogos-land in the British Museum: in these some of the feathers on the breast, abdomen, and thighs exhibit a dark brown centre, surrounded by a whitish brown ring, outside of which is a second ring of dark brown, and beyond that the edge of the feather, which is of a pale drab.

I may add that I find no differences between the markings on the quill-feathers of the wings and tail in *A. rapax* and in *A. albicans*, though both are subject to slight individual variations; the transverse markings of the tail in both races are usually nine in number; but they are frequently indistinct, even in adult birds, and sometimes almost imperceptible.

Amongst the synonyms referred by Mr. Sharpe to *A. rapax* is "*Falco belisarius*" of Levaillant, jr., figured in the 'Exploration Scientifique de l'Algérie,' "Oiseaux," pl. 2. Whether the bird there represented is rightly referable to the typical *A. rapax*, to the eastern *A. albicans*, or to a third local race not absolutely identical with either of these, is a question which, in the absence of an adequate series of North-African specimens, I am unable to answer. Of the two such to which I have already alluded, one was obtained by the late M. Favier near Tangier, and is preserved in the Norwich Museum; the other is Mr. Salvin's Djendeli specimen, which is described in 'The Ibis' for 1859, p. 181, and which he has kindly lent to me for examination. Both these examples are in moult, the latter being more advanced than the former; in both, the new feathers on the upper parts present a peculiar chocolate tint, which appears to me to differ (especially in the case of the Djendeli bird) from the ordinary coloration both of *A. rapax* and of *A. albicans*, but in both cases to approach nearer to the latter than to the former; in both specimens the older portions of the plumage are so worn and faded as to be of little use in the diagnosis between such closely allied races.

Aquila vindhiana of India, though very closely allied to *A. rapax* and *A. albicans*, is, on the average of specimens, a rather smaller bird than either. In coloration it comes nearest to *A. albicans*; but the latter seems never to assume the peculiar grey tint on the head, neck, and underparts which Mr. Sharpe defines as a "greyish mouse-colour" in his description of the "young" stage of *A. vindhiana**.

Mr. Sharpe's description of this plumage and of that of an adult female may be supplemented by a reference to the particulars given in Jerdon's 'Birds of India,' vol. i. p. 60, and in Mr. Hume's 'Scrap-book,' p. 176†, also by the description of the nestling-plumage in Hume's 'Nests and Eggs of Indian Birds,' p. 30; to the information afforded by these authorities, I may add the following note, dated July 1875, for which I am indebted to the kindness of Mr. W. E. Brooks:—"I have *A. vindhiana* from the nest to old age: the nestling is a light-toned bird, rather tawny on the body-plumage; the second plumage is of a dull greyish brown, somewhat like the brown of immature *A. nipalensis*; this passes into the dark brown bird, either wholly dark brown, or with part of the body whity brown. The whity-brown stage is that of a very old bird; but it is possible that younger birds, the colours of which are not fast, might, in a comparatively short time, reach the whity-brown stage. This species is subject to great variation; and I have not seen two birds quite alike."

I may also observe that in fully adult specimens of *A. vindhiana*, particoloured feathers, of two shades of brown, frequently occur on the upper scapulars and lesser wing-coverts, and also on the abdomen and thighs, which closely resemble the corresponding feathers in the fully plumaged adults of *A. albicans*; I have likewise noticed that adult specimens of *A. vindhiana* often exhibit a decided tinge of rufescent fulvous on the nape of the neck and the upper part of the back; but in *A. vindhiana*, as in *A. albicans*, the plumage has so great a tendency to become bleached and worn, that it is only in newly assumed feathers that such details of marking and coloration can be satisfactorily observed.

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* Specimens of *A. vindhiana* exhibiting this grey tint are scarce in collections; the British Museum possesses such a one in very perfect unfaded plumage, from which I presume Mr. Sharpe took his description of the "young" bird.

† In both these works the present species is referred to under the name of *Aquila fulvescens*.

I add some measurements of Eagles which I have recently examined belonging to the group to which I have just referred:—

	Wing from carpal joint. in.	Tarsus. in.
Typical *Aquila rapax*:		
♂. Damara Land (Andersson): in collection of Canon Tristram	20·6	3·4
♂. Natal (Ayres): Norwich Museum	20·6	3·4
♂. Ditto (ditto): ditto	20·3	3·5
Presumed ♂. Snowberg, S. Africa: British Museum	20·2	3·2
♀. S. Africa (Sir A. Smith): Norwich Museum	20·5	3·6
Presumed ♂. Senegal: British Museum	19·5	3·0
Doubtful Specimens:		
Non-rufous specimen from S. Africa: British Museum: presumed ♂ ..	19·7	2·8
♀. Tangier (Favier): Norwich Museum	22·8	3·5
Presumed ♀. Djendeli, Eastern Atlas: in collection of O. Salvin	21·2	3·7
♂ (Rufous). Senafé, Tigré (Blanford): British Museum*	21·0	3·1
♂ (Rufous). Angollala, Shoa: British Museum	20·0	3·0

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* Mr. Blanford gives these measurements as taken from this specimen (probably when freshly killed) as 20·3 and 3·4 (*vide* 'Geology and Zoology of Abyssinia,' p. 296).

	Wing from carpal joint. in.	Tarsus. in.
Typical *Aquila albicans*:		
♀. Shoa: British Museum	21·3	3·3
Largest of ten Abyssinian specimens in British and Norwich Museums (sex undetermined)	21·6	3·3
Smallest of ditto (ditto)	19·7	3·0
Aquila vindhiana:		
♂. India (W. Ewer): Norwich Museum	19·8	3·0
♀. Ditto (ditto): ditto	21·1	3·0
Presumed ♀. N.W. India (W. E. Brooks): Norwich Museum	21·8	3·1

For the sake of comparison I may quote the following measurements of *A. vindhiana* from Mr. Hume's 'Scrapbook,' p. 178:—

	Length of wing. in.
Largest of five males	20·4
Smallest of ditto	19·5
Largest of seven females	21·75
Smallest of ditto	20·75

XX.—*Notices of Recent Publications.*

[Continued from p. 127.]

13. *Mosenthal and Harting's 'Ostrich-farming.'*

[Ostriches and Ostrich Farming. By Julius de Mosenthal and James Edmund Harting. 8vo, pp. 246. London: 1876.]

The new industry of Ostrich-farming, and the exhibition of the various sorts of feathers in the late Vienna Exhibition, appear to have suggested the writing of this book, although other motives may have contributed to it. Had the authors confined themselves to their original limits, or extended them only to include an account of the Rheas, the feathers of which alone of the other Struthious birds have any commercial value, the purpose for which the work was undertaken would have been fulfilled. But we venture to think that the history of the Emus, Cassowaries, and Kiwis, which occupies a large portion of Mr. Harting's share of the work, while of no use to the Ostrich-farmer, will scarcely prove of much service to the scientific ornithologist. The matter which it contains, so far as we can see, throws no new light on the subject*, and is chiefly compiled from books which are quite amongst the most accessible of all ornithological literature.

The portion of this work relating to the Ostriches and the Rheas, as well as to the system of farming the former, contains many useful details, and will doubtless serve the purpose for which it was written.

Several spirited drawings accompany this book; but the scenes depicted, to a great extent, illustrate hunting these birds rather than the more peaceful occupation of farming them. Perhaps in these early days of the latter process Ostrich-catching forms a prominent feature.

14. *'Bulletin' of the Zoological Society of France.*

[Bulletin de la Société Zoologique de France pour l'année 1876. Première Année, 1^e, 2^e et 3^e parties. Paris, au siége de la Société, Quai des Grands-Augustins 55. 1876.]

The institution of a new Zoological Society in France must be a subject of much congratulation among naturalists, of whom all, we are sure, will wish the founder and promoters every sort of success. We see several ornithologists named in the "bureau" of the new Society, and may therefore expect ornithological contributors to the journal, of which, indeed, there are several in the first number.

The president, M. Jules Vian, commences the new journal with an article on the specimen of *Phaleris psittacula* which was captured in Sweden in 1860 (Ibis, 1869, p. 221), and gives a figure and description of its skeleton. The second portion of M. Vian's paper relates to *Mormon grabæ* of Brehm, which has recently occurred on the west coast of France, and of which he vindicates the claims to be recognized as a valid species*. Here are two new subjects for Mr. Dresser to consider.

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* The statement (p. 102) concerning the breeding of *Casuarius australis* in the Jardin des Plantes might claim to be an exception to this remark; but we believe this is an error, and that the "*Casoar de Nouvelle Hollande*," i. e. *Dromæus novæ hollandiæ*, was the bird that really bred at Paris, as it has in many other places in England and on the Continent.

Next we have (p. 36) a joint paper by Mr. Sharpe and M. Bouvier (the Secretary of the new Society) on a collection of birds made by M. Petit in Congo, containing representatives of about 100 species, and amongst them a new *Psalidoprocne*, which is described and figured as *P. petiti*. M. Louis Bureau follows with a good essay upon the vexed question of the different plumages of *Aquila pennata*, of which he has had the good fortune to obtain five nests on the Lower Loire. In parts ii. and iii. MM. A. Besnard and A. Lacroix, each, contribute notes on some of the rarer birds of France, such as *Turdus varius* of Pallas, *Falco concolor*, and a Stonechat referred by the latter, somewhat doubtfully, to *Saxicola squalida* of Eversmann. But the most important ornithological paper in the number is the first portion of a "Revue critique de la Faune Ornithologique de la Sibérie Orientale," by M. Taczanowski of Warsaw. This is mainly based upon the large collections made by Dr. Dybowski, who, as is well known to ornithologists, has been actively engaged in collecting birds in Eastern Siberia during the past ten years, and embraces a revised *résumé* of the memoirs upon his investigations already published in the 'Journal für Ornithologie.'

15. *D'Hamonville's Catalogue of the Birds of Europe.*

[Catalogue des Oiseaux d'Europe ou énumération des espèces et races d'oiseaux dont la présence, soit habituelle, soit fortuite, a été dûment constatée dans les limites géographiques de l'Europe, par J. C. L. T. D'Hamonville. 8vo, pp. 74. Paris, Baillière; London, Quaritch: 1876.]

This contains the names of the birds of Europe in Latin and French, according to the nomenclature of Degland and Gerbe, with a slight indication of their distribution. A few footnotes on doubtful species and rare occurrences are added. M. D'Hamonville means well, but is hardly "up to the mark," we fear.

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* See Mons. Olphe-Galliard's letter on this bird, Ibis, 1875, p. 267.

16. *Brown's Travels in British Guiana.*

[Canoe and Camp-life in British Guiana. By C. Barrington Brown, Assoc. R.S.M., late Government Surveyer in British Guiana. 1 vol. 8vo. London, Stanford: 1876.]

This interesting narrative of Mr. Brown's various excursions while executing his office of Surveyor of British Guiana is replete with notes and observations on natural history. Many of these relate to birds, such as those on *Rhynchops* (p. 95), *Chasmorhynchus variegatus* (p. 123)*, *Sturnella ludoviciana* (p. 167), *Acanthylis collaris* (p. 219), *Cancroma cochlearia* (p. 257), and *Opisthocomus cristatus*. Mr. Brown is well known to geographers as the discoverer of the celebrated Kaieteur waterfall on the Upper Essequibo, which appears to be frequented by "myriads of millions" of a large Swift (*Acanthylis collaris* sive *zonaris*). The nesting-place of *Steatornis*, in a cave on the Upper Mazaruni (see p. 286), is, so far as we are aware, quite a new discovery, as are likewise the nesting-habits of *Ortalida motmot* and *Odontophorus guianensis* (p. 371). The explanation of the curiously formed wing-feathers of *Penelope pipile* (p. 387) is likewise new to us.

17. *Ornithological Results of the 'Gazelle' Expedition.*

[Uebersicht der auf der Expedition Sr. Maj. Schiff 'Gazelle' gesammelten Vögel. Zusammengestellt von J. Cabanis und A. Reichenow. Journ. f. Orn. 1876, p. 319†.]

The German S.S. 'Gazelle' conveyed the astronomers of that nation to Kerguelen's Land for the observation of the Transit of Venus in December 1875. A large collection of birdskins, birds in spirit, skeletons, and eggs was formed during the voyage, principally by Dr. Hüsker, the medical officer, in the above-named island, and in other places visited during the voyage round the world (Fiji Islands, New Ireland, New Hanover, Timor, and New Guinea). Altogether examples of 143 species of birds were obtained, which are enumerated by Messrs. Cabanis and Reichenow in the present paper. Five species are characterized as new to science, namely:—*Rhipidura fuscovirens,* from New Guinea; *Gracula gnathoptila,* from New Hanover; *Trichoglossus flavicans,* from New Hanover; *Œdirhinus globifer* (new genus and species of Fruit-Pigeons), from New Ireland; and *Megapodius hueskeri,* from New Hanover. A new genus, *Melidipnus,* is made for *Ptilotis megarhynchus,* Gray, from New Guinea. New Hanover, which, so far as we know, has not been previously visited by a collector, lies just to the west of New Ireland, and belongs, no doubt, to the Papuan subregion. The following is a list of the species procured in this new locality:—

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* On the discovery of this species in British Guiana, see Ibis, 1869, p. 462.

† We may remark that the number containing this paper, although dated "July 1876," was not issued to the subscribers until January 1877!

1. Sauloprocta melanoleuca.
2. Monarcha cordensis.
3. Monarcha lucida.
4. Lalage karu.
5. Campephaga plumbea.
6. Lamprotornis metallicus.
7. Gracula gnathoptila.
8. Halcyon sacra.
9. Calyptorhynchus banksii.
10. Eclectus polychlorus.
11. Lorius hypœnochrous.
12. Trichoglossus flavicans.
13. Carpophaga (Globicera) pacifica.
14. Macropygia turtur.
15. Lamprotreron superba.
16. Œdirhinus globifer.
17. Megapodius hueskeri.
18. Totanus incanus.
19. Anas superciliosa.

18. *Bulletin of the Nuttall Ornithological Club.*

[Quarterly Bulletin of the Nuttall Ornithological Club, Cambridge, Mass. Nos. 1-4 (1876). Cambridge, Mass. Published by the Club.]

We see with pleasure that our American friends have established a new ornithological club, called after one of the most classical and revered names in American ornithology. Four numbers of its 'Bulletin,' forming the first volume, are now before us. Mr. J. A. Allen is its editor, assisted by Prof. Baird and Dr. E. Coues, than whom, we need hardly say, three more efficient persons, qualified for the task, could not have been found.

The papers in the first four numbers of the Bulletin are mostly short, and principally devoted to local matters. Mr. W. Brewster (p. 1) describes and figures a new *Helminthophaga,* of which a single specimen was procured in Massachusetts in 1870. It is named *H. leucobronchialis,* and is most nearly allied to *H. chrysoptera.* In the second number

(p. 46) Dr. T. H. Streets describes a new Duck from Washington Island, one of the Fanning group in the Pacific, which he proposes to call *Chaulelasmus couesi.* It is in plumage like *C. streperus* in winter dress, but much smaller in size. In the third number Dr. E. Coues gives some interesting remarks on the number of the primaries in the Oscines. In the fourth number is an excellent paper by Mr. Ridgway on geographical variation in *Dendrœca palmarum,* and Dr. Merrill, in his "Notes on Texan Birds," introduces several species as new to the United States. Notices of new publications are given in the last three numbers.

19. *Palmén's Migration-routes of Birds.*

[Ueber die Zugstrassen der Vögel von J. A. Palmén, Docent der Zoologie an der Universität Helsingfors. Leipzig, Engelmann. 1 vol. 8vo, pp. 292.]

Some of our readers may be acquainted with an excellent academic dissertation, "Om Foglarnes Flyttnings vägar," published by Prof. Palmén at Helsingfors in 1874. We have now a revised and augmented translation of the above-named work in a tongue better known to most English naturalists, and well worthy of their study. It is an attempt to answer the question, What routes are taken by migratory birds from their breeding-places to their winter-quarters and back again? For good reasons, explained by our author, special attention is given to some twenty species which breed in the Polar islands, or only in the extreme north of Europe, in order to solve this problem; and their distribution at different seasons throughout the Old World is carefully studied. An outline map shows at a glance the results arrived at as regards the arctic categories of migrants. But much more work remains to be done before any thing like a complete answer can be given to the problem which Prof. Palmén is studying.

20. *Dr. Streets's Account of the Fanning Islands.*

[Some Account of the Natural History of the Fanning Group of Islands. By Dr. Thomas H. Streets, U.S. N. Amer. Nat. xi. pp. 65 (1877).]

An interesting notice of the birds of the Fanning group of islands, in the Pacific, is given in the 'American Naturalist' for February last. Fanning's group consists of four coral-islands, lying a little north of the equator, between 157° and 162° W. long. One of them, Washington Island, is remarkable as possessing a peculiar species of Parrot (*Coriphilus kuhli**) and another land-bird, probably a Flycatcher, specimens of which were obtained by Dr. Streets, but have disappeared in the "general collection of the Smithsonian Institution." We trust they may be rediscovered, as also those of an allied species from "Christmas Island," which have, for the present, met with a similar fate. There is likewise a Duck (*Chaulelasmus couesi*), allied to our well-known Gadwall, peculiar to Washington Island; and this and the other islands are resorted to by several species of oceanic birds for breeding-purposes.

21. *Dr. Ogden on a supposed new Paradise-bird.*

[Remarks on *Ptilorhis wilsonii*, Ogden. By J. A. Ogden, M.D. Proc. Acad. Nat. Sc. Phil. 1876, p. 182.]

In the 'Proceedings' of the Academy of Sciences of Philadelphia for 1875 (p. 451) Dr. Ogden described and figured a new Rifle-bird as *Ptilorhis wilsonii*, from a mounted specimen in the Academy's collection. Incited to further inquiries by Mr. D. G. Elliot, Dr. Ogden has now discovered that the legs and feet of the specimen are "those of another bird," and it remains more than questionable whether this supposed species is distinct from *P. magnifica*.

22. *Prejevalsky's Mongolia and Northern Thibet.*

[Mongolia, the Tangut Country, and the Solitudes of Northern Tibet, being a Narrative of Three Years' Travel in Eastern High Asia, by Lieut.-Col. N. Prejevalsky. Translated by E. Delmar Morgan, F.R.G.S.; with Introduction and Notes by Col. Henry Yule, C.B. Two volumes. London, 1876: Sampson Low & Co.]

Though not a strictly scientific work, no naturalist should omit to read Col. Prejevalsky's narrative, containing, as it does, numerous allusions to birds and other animals throughout its interesting pages. Col. Prejevalsky started from Pekin, and, travelling south-west, crossed the Hoang-ho at the most northern part of its great bend. Then turning along its south bank for 250 miles, he recrossed it at Ding-hu, and proceeded into Alashan, a wild and barren mountain-district, lying to the south of the Gobi. Here, we believe, most of his best zoological discoveries were made. In a second expedition in 1872, Col. Prejevalsky succeeded in penetrating far beyond Alashan, through the little-known Chinese province of Kansu, to the large lake of Kokonor, the original aim of his journey. In a winter-journey from Kokonor he finally penetrated to the banks of the Upper Yang-tze, only 500 miles from L'hassa, where only want of funds stopped his further progress.

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* *Cf.* Sclater, P. Z. S. 1876, p. 421.

23. *Rowley's 'Ornithological Miscellany.'*

[Ornithological Miscellany. Edited by George Dawson Rowley, M.A., F.L.S., F.Z.S., Member of the British Ornithologists' Union. Part VI. London, 1877: Trübner & Co.]

The sixth part of Mr. Rowley's 'Ornithological Miscellany,' a work of the general character of which we have already spoken, contains the commencement of a memoir of much importance to English ornithologists. We have just spoken of Col. Prjevalsky's 'Travels in Mongolia,' and of the many zoological discoveries which he made; but the technical portion of the work relating to the birds was not included in Mr. Morgan's English edition. Aware of its importance to naturalists, Mr. Rowley has now had a translation of this part of it made by Mr. F. Carl Craemers, the first portion of which, embracing an account of 117 species met with by Colonel Prjevalsky in Mongolia, the Tangut country, and the solitudes of Northern Thibet, is included in the present number of the 'Ornithological Miscellany,' with a promise of the remainder to follow. The plates of the original work are also faithfully reproduced. The new species described by Colonel Prjevalsky are:—*Caprimulgus plumipes*, from China; *Ruticilla alaschannica*, from the Alashan mountains; *Calliope tschebaiewi*, from the Kansu mountains; *Pœcile affinis*, from the Alashan and Kansu; and *P. superciliosa*, *Lophophanes dichroides*, and *Merula kessleri*, all from the Kansu mountains.

Mr. Rowley also gives us in his present number excellent figures of *Platycercus rowleyi*, a lately described species from New Zealand, of *Chalcophaps indica*, and of the almost extinct Labrador Duck (*Somateria labradoria*). A disquisition on some of the extinct birds of the Mascarenes is also included amongst the varied contents.

24. *Mulsant's 'Histoire Naturelle des Oiseaux-Mouches.'*

* [Histoire Naturelle des Oiseaux-Mouches ou Colibris, constituant la famille des Trochilidés. Par E. Mulsant et feu Edouard Verreaux. 4to, T. ii. Livr. 3 & 4; T. iii. Livr. 1 & 2. Lyon: 1876.]

Since our last notice (Ibis, 1875, p. 510) Mons. Mulsant has made steady progress with his work, so that now two thirds of it have been issued, six more Livraisons alone remaining for its completion. The four Livraisons now before us seem quite equal in execution to those which have preceded them; and as the matter contained in them embraces references to the most recently published information respecting the Trochilidæ, they give evidence to M. Mulsant's industry. The author's system of minute generic subdivisions is still further carried out, and we notice several new generic names for sections of the microscopic genera into which the Humming-birds have already been divided. The characters upon which these would-be genera rest prove, upon examination, to be drawn solely from style of coloration, and are, in our opinion, little more than of specific value in a wide sense. We notice that M. Mulsant maintains the old position assigned to the so-called *Anthocephala castaneiventris* (iii. p. 123), having apparently overlooked the remarks in the 'Proceedings' of the Zoological Society of London (1870, p. 206), where this supposed species was almost conclusively proved to be the female of either *Oreopyra leucaspis* or *O. calolæma*—an opinion the correctness of which all subsequent experience has tended to confirm. The plates accompanying these parts include figures of *Metallura jelskii* and *Heliangelus barali*, species which had not before been delineated.

25. *Barboza du Bocage's Papers on African Ornithology.*

Prof. J. V. Barboza du Bocage has just sent us several of his recently published papers on African birds, extracted from the 'Jornal de Sciencias math., phys. e nat.' no. xx. 1876.

The first is the "Duodecima Lista" of the author's 'Aves das Possessões Portuguezas d'Africa occidental,' and contains an account of seventy-three species of birds sent from Humbe and other places in Angola by Senhor Jose d'Anchieta, whose labours in that portion of Africa have served so largely to enrich the Lisbon Museum. No novelties are noticed in this collection; but Prof. Bocage recognizes several birds in it not before noticed from this part of Africa. Appended to this paper is a list of the names of twenty-one species of birds contained in a collection from the Quanza, recently sent to the Lisbon Museum by Mr. R. B. Sharpe.

The next paper contains notes on a small collection of Angola birds made by the well-known botanical traveller, Dr. Welwitsch. This collection contained examples of only twenty determinable species of birds, concerning some of which Prof. Bocage has written interesting notes. As all the specimens were preserved in alcohol, their determination has in some cases proved uncertain.

In a continuation of his "Mélanges Ornithologiques," Prof. Bocage makes some critical remarks on the genus *Sycobius*, with special reference to Mr. Elliot's paper on this genus, published in our last year's volume (1876, p. 456), and takes the opportunity of describing a supposed new species of the genus, allied to *S. nigerrimus*, as *S. albinucha*. It is stated to be from "West Africa," and was received from Mr. Whitely through Mr. R. B. Sharpe.

26. *Bureau on the Booted Eagle.*

[L'aigle botté, *Aquila pennata* (Cuvier), d'après des observations recueillies dans l'ouest de la France. Par L. Bureau. Assoc. française pour l'Av. des Sc., Congrès de Nantes, 1875.]

We are indebted to Mons. Louis Bureau for a copy of a very interesting paper on the Booted Eagle, as observed by him in Western France. With the author's own notes are incorporated Count Wodzicki's observations on the same bird in Poland, and those of Mons. Alléon made on the Bosphorus.

The memoir is full of interesting details respecting the curious dimorphic condition of the plumage observable in this species, the true interpretation of which was long misunderstood. Mons. Bureau's conclusions on this subject are best given in his own words:—

"Les mâles et les femelles revêtent indifféremment la livrée de l'un ou de l'autre type.

"Tantôt il y a alliance entre sujets d'une même livrée, tantôt croisement des deux races.

"De l'une ou l'autre de ces unions naissent habituellement des jeunes d'un seul type, plus rarement on trouve dans une même nichée des jeunes de l'une ou de l'autre race.

"Le plumage des deux types se modifie parallèlement avec l'âge; mais ces changements sont plus accusés dans le type ordinaire que dans le type nègre.

"Les sujets des tous deux, depuis le jeune âge jusqu'à l'âge adulte, se développent en conservant les caractères de leur type."

In addition to the discussion of these special points, the paper also contains references to most of the works where the Booted Eagle is mentioned, its geographical distribution, nidification, eggs, descriptions of birds of both sexes and different ages from young in down to the adult, and habits; so that the monograph of the species is a very complete one. On one point Mons. Bureau has been led into error by Dr. Schlegel, where he gives (p. 3) Australia as coming within the range of the species. *Aquila morphnoides* of Gould, though allied to *A. pennata*, is a distinct species.

27. *Vennor's 'Canadian Birds of Prey.'*

[Our Birds of Prey, or the Eagles, Hawks, and Owls of Canada. By Henry G. Vennor, F.G.S. With 30 Photographic Illustrations by Wm. Notman. 4to. Montreal: 1876.]

Ornithology has never taken deep root as a scientific study in Canada, and, as yet, we have few books treating of its birds; we would gladly, then, say as many good words as possible for this work of Mr. Vennor's, were we justified in doing so. Though the author has apparently had before him the standard works on his subject, he has used them to little profit, judging from the first page of his book—where the main divisions of the birds of prey are treated of, and these are divided into two "suborders," those with stout bills which catch their prey alive, and those with feeble bills which feed on carrion &c., and a few lines lower down into "three great subfamilies." The Vulturidæ, one of the latter, are said to contain three genera, of which *Cathartes* alone reaches Canada! The Old World is evidently omitted from consideration. The species treated of probably include all, or nearly all, those that are to be found in Canada; and the most valuable part of the text consists in the accounts given of the occurrences and distribution of each species. Of the photographs which illustrate the book, we can only say that they are good photographs of wretchedly stuffed specimens, though Mr. Vennor appears to be quite satisfied with their any thing but lifelike attitudes.

28. *Salvadori's Recent Ornithological Papers.*

[(1) Catalogo di una collezione di Uccelli dell' Isola di Buru, inviata al Museo Civico di Genova dal signor A. A. Bruijn. Ann. Mus. Civ. Genoa, viii. p. 367.

(2) Catalogo degli Uccelli raccolti dai sigg. A. A. Bruijn ed O. Beccari durante il viaggio del trasporto da guerra olandese "Surabaia" dal Novembre 1875 al Gennaio 1876. Ann. Mus. Civ. Genoa, viii. p. 395.

(3) Intorno alla supposta femmina del *Dicæum retrocinctum*, Gould. Ann. Mus. Civ. Genoa, viii. p. 509.

(4) Catalogo di una seconda collezione di Uccelli raccolti dal sig. L. M. D'Albertis nell' Isola Yule e sulla vicina costa della Nuova Guinea e di una piccola collezione della regione bagnata dal Fiume Fly. Ann. Mus. Civ. Genoa, ix. p. 7.

(5) Intorno a due piccole collezioni di Uccelli, l'una di Pettà (Isole Sanghir) e l'altra di Tifore e di Batang Keteil, inviate dal signor A. A. Bruijn al Museo Civico di Genova. Ann. Mus. Civ. Genoa, ix. p. 51.]

Dr. Salvadori sends separate copies of five more of his valuable papers on the birds of the Malayan and Papuan Archipelago, all published during the latter part of 1876.

The first gives us an account of a collection made in Bouru by one of the collectors of Mr. Bruijn, and sent to the Museo Civico of Genoa. It contains 180 individuals, referable to 53 species, some of which are not included in the excellent memoir of Mr. Wallace on the birds of that island (P. Z. S. 1863, p. 18). *Aprosmictus buruensis* is described as new.

The second contains a list of the birds collected by Mr. Bruijn and Dr. Beccari during their voyage in the Dutch warship 'Surabaia' along the north coast of New Guinea*. Forty-nine species were represented in the collection by about 100 individuals. *Nasiterna beccarii* is described as new, but based on a single female only. The *Goura* of Humboldt Bay, is hypothetically named *G. beccarii*; but only a crest was obtained, which most resembles that of *G. victoriæ*!

In a third short paper Dr. Salvadori shows that the bird figured by Mr. Gould in part viii. of the 'Birds of Asia' as the *female* of *Dicæum retrocinctum*, really belongs to another species, of which the correct name is *D. rubriventer* (Less.).

The subject of our author's next study is the second collection made by D'Albertis on Yule Island and on the neighbouring coast of New Guinea, and a small collection made by the same diligent naturalist on the banks of the Fly river. In the first series, containing examples of 112 species, 8 are described as new, namely *Chalcopsittacus chloropterus, Polophilus nigricans, Dacelo intermedius, Ptilotis albo-notata, Pycnonotus stictocephalus, Sphenœacus macrurus, Eupetes nigricrissus,* and *Munia caniceps*†.

The Fly-river collection contained only 12 species, of which *Cyclopsittacus fuscifrons, Cyanalcyon stictolæma,* and *Goura sclateri* are described as new.

Dr. Salvadori's last contribution relates to two more collections sent by Mr. Bruijn to Genoa, one from Pettà (Sanghir group), and the other from Tifore and Batang Keteil, two islets lying between Halmahera and Celebes. From Pettà

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* See 'Cosmos,' vol. iii. p. 349, for an account of the voyage.

† Besides these, D'Albertis obtained two new Parrots at Naibui (*Cyclopsitta suavissima* and *Trichoglossus subplacens*), which have been described by Sclater, P. Z. S. 1876, p. 519.

Pitta cæruleitorques, Dicæum sanghirense, Prionochilus sanghirensis, and *Calornis sanghirensis* are described as new. From Tifore and Batang Keteil only six species were obtained, which, however, tend to show that these islets belong zoologically rather to Halmahera than to Celebes.

29. *Salvadori's Prodromus of Papuan Ornithology.*

[Prodromus Ornithologiæ Papuasiæ et Moluccarum. Auctore Thoma Salvadori. Pars I. Paradiseidæ. Ann. Mus. Civ. di St. Nat. di Genova, vol ix. p. 188. Pars II. Columbæ, ibid. p. 194.]

As a prelude to his grand work on the birds of the Papuan subregion, which is to be based on the extensive collections of Beccari, D'Albertis, and Bruijn, Dr. Salvadori has commenced a series of lists of the species of the principal groups of this avifauna, with an account of their distribution, of which these two papers are the first.

Of the Paradiseidæ, Dr. Salvadori enumerates 31 species, of Pigeons 90, as belonging to the Papuan subregion. Of the last-named group three are described as new in the present paper, namely *Ptilopus zonurus*, from the Aroo Islands, *Macropygia keiensis*, from the Key Islands, and *M. griseinucha*, from Jobi and Mysore. *Gouri beccarii* is established provisionally upon the crest of a bird of this genus, obtained by Beccari at Humboldt Bay.

XXI.—*Letters, Announcements, &c.*

The following letters, addressed "To the Editors of 'The Ibis,'" have been received:—

Sirs,—In my recently published account of the zoology of Persia* ('Eastern Persia,' vol. ii. p. 128), I classed *Caprimulgus unwini*, Hume, as a synonym of *C. mahrattensis*, Sykes. My reason for so doing was that Mr. Hume described *C. unwini* (Ibis, 1871, p. 406) as distinguished from all other Indian Goatsuckers by the following leading characteristics:—The upper three fourths of the tarsus are feathered in front; the two outer tail-feathers on each side are tipped with white, more broadly in the male; and both sexes have white spots on the first three primaries. Now *C. mahrattensis* is distinguished by precisely these characters, except that the tarsus is only about half concealed by feathers in the specimens I have examined. I should add that Lord Tweeddale first pointed out to me the close agreement between the description of *C. unwini* and the characters of *C. mahrattensis.*

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* The whole zoological portion of this work was in print before the end of 1874; hence the omission of all notices of subsequent publications.

When I told Mr. Hume of the conclusion at which I had arrived, he assured me I was mistaken, and placed the whole of his specimens at my disposal for examination. He at the same time said that his only doubt was whether *C. unwini* might not prove to be a variety of *C. europæus.* At the time he described the former, his only specimen of *C. europæus* was a large English female. A male specimen, from Europe, but without precise locality, has since been added to his collection; and I find that this agrees well with the types of *C. unwini.*

The conclusion at which I have arrived, after examining all the specimens, is, that the sex of one of the types of *C. unwini* was probably wrongly determined, and that, instead of being male and female, both skins are those of males, that they are quite distinct from *C. mahrattensis,* but that they belong to the pale-grey race of *C. europæus,* of which I obtained specimens in South-eastern Persia, and that, whilst the name of *C. unwini* must become a synonym, *C. europæus* must be added to the Indian fauna. Besides the two original types from the Agror valley, in Hazara, in the extreme north of the Punjab, Mr. Hume has since obtained a female without any white on the tail from Mari (the sanitarium somewhat further east); and he is inclined to refer to the same species two other females, one from Sirsa, in the Punjab, the other from Etawah, in the north-west provinces. These latter, however, are doubtfully identified, being smaller in all their dimensions; one of them is certainly immature. It will be curious if this proves to be a resident race, and not migratory, like the western form.

I have also examined the types of the two species of *Batrachostomus* described as new by Mr. Hume ('Stray Feathers,' ii. p. 348) by the names of *B. castaneus* and *B. punctatus*. These have been referred by Lord Tweeddale, in Blyth's "Catalogue of the Mammals and Birds of Burma" (J. A. S. B. 1875, pt. ii. extra number, p. 84), the former to *B. affinis*, Blyth, the latter to *B. moniliger*, Layard. There are in Mr. Hume's collection the following specimens representing this genus:—

Batrachostomus affinis, Blyth, three specimens (sex not noted) from Malacca. These have been compared with Blyth's original type in Calcutta.

B. castaneus, Hume, three specimens, from Sikkim, sex doubtful.

B. sp., two specimens, one adult and marked female, the other immature, from Sikkim, closely agreeing in general coloration with the figure of *Otothrix hodgsoni* (P. Z. S. 1859, p. 101, pl. clii.), but having the same bill as *B. castaneus*.

B. moniliger, Layard, three specimens—a male, female, and nestling (sexes carefully determined by Mr. Bourdillon)—from Travancore.

B. punctatus, Hume, the type from Ceylon, sex undetermined.

It is, in the first place, quite clear that *B. castaneus* is a different bird from *B. affinis*, despite so close a general resemblance that one bird might easily be mistaken for the other. The coloration above is nearly the same, *B. castaneus* being a little paler chestnut, and wanting entirely the conspicuous white spots which occur on the wing-coverts of *B. affinis*, though both birds have the white black-edged spots on the scapulars, and the narrow white collar edged with black. Beneath there is more difference, *B. affinis* being much paler, and having the feathers of the breast and abdomine pale isabelline, with rufous edges, which are broader on the breast. In *B. castaneus* the greater portion of the lower surface is the same colour as the back, chestnut; but many feathers on the throat, breast, and upper abdomen are white, with black margins. The number of these feathers and their distribution appear to vary slightly in the different specimens.

The great distinction, however, between *B. castaneus* and *B. affinis* is in the form of the bill, which is much smaller in the former, measuring in all three specimens about 1·05 in. across at the gape, whilst in the three specimens of *B. affinis* it measures 1·4 in. *B. castaneus,* however, is rather the larger bird of the two, the wing measuring 5·2 to 5·5, whereas in none of the specimens of *B. affinis* examined does the wing exceed 5·1, and in one it is only 4·5, as in Blyth's original type.

The female bird already noticed as agreeing in general coloration with *Otothrix hodgsoni* agrees fairly in all its dimensions with *Batrachostomus castaneus,* and may be the female of it. *Otothrix* was separated from *Batrachostomus* by Mr. Gray on account of its smaller bill and different coloration; and although the shape of the bill in the figure (P. Z. S. 1859, pl. clii.) is totally different from that of *Batrachostomus,* no mention of any such startling difference is made in the text, and I see that Lord Tweeddale, in Blyth's Catalogue of the Birds of Burma, p. 83, has referred *O. hodgsoni* to *Batrachostomus,* so that it is probable that the representation of the bill in the figure is defective. On the whole I think that Mr. Hume's suggestion that *B. hodgsoni* and *B. castaneus* are the two sexes of one bird is highly probable. The young bird has the grey mottled plumage of *B. hodgsoni,* which is in favour of the latter being the female.

Of the two specimens from Travancore, referred by Mr. Hume to *B. moniliger,* the female agrees on the whole fairly with Mr. Blyth's description (J. A. S. B. xviii. p. 806) both in coloration and dimensions. These skins will be fully described by Mr. Hume in a forthcoming number of 'Stray Feathers.' Both differ greatly from *B. punctatus,* being much larger, with bills measuring fully 1·4 across at the gape, whilst the breadth in *B. punctatus* is 1·25. In the latter the wing measures 4·35, and the tail 3·9; in the female of *B. moniliger,* which approaches nearest in plumage to *B. punctatus,* the wing measures 4·8 and the tail 4 inches. The whole plumage in the latter is browner; and although the difference is much less than in the case of *B. affinis* and *B. castaneus,* I certainly think that *B. moniliger* and *B. punctatus* are distinct forms.

It is, however, a curious circumstance that the female of *B. moniliger* is more uniform in colour and more rufous than the male, the reverse of what is supposed to be the case in *B. hodgsoni*. Mr. Hume, who called my attention to this, suggested that, after all, perhaps *B. castaneus* is the female of *B. hodgsoni*. This I rather doubt, because the plumage of the young bird agrees with the latter; but the two plumages (the rufous and the brown) differ too much for it to be probable that they are merely red and grey phases, irrespective of sex.

Since writing the above, however, I see that Dr. Jerdon (Ibis, 1871, p. 356) has already stated that Mr. Blyth considered *Otothrix* to be the male of *Batrachostomus*. All that Mr. Blyth stated, in his commentary on the 'Birds of India,' was that *Otothrix* is merely the adult phase of certain *Batrachostomi*. The fragments of two specimens of *Batrachostomus*, from Darjeeling, briefly described by Mr. Blyth in 1849 (J. A. S. B. xviii. p. 806), were at first referred by him to *B. affinis*; but subsequently, in his 'Catalogue of the Birds in the Museum of the Asiatic Society,' p. 81, he ascribed them to "a nearly allied but distinct species." From the description it appears probable that these specimens belonged to the two forms subsequently described as *Otothrix hodgsoni* and *B. castaneus*.

Yours &c.,
W. T. BLANFORD.

Simla, October 22nd, 1876.

SIRS,—As there has been of late considerable confusion in the nomenclature of the species of *Tetraogallus*, perhaps a few words on the subject will not be out of place.

The type of the genus *Tetraogallus* is generally admitted to be a bird which was obtained by S. G. Gmelin at Astrabad, in Northern Persia, and was called by him *Tetrao caspius* (Reise d. Russl. th. iv. p. 67, pl. x.). Pallas subsequently described and figured a bird procured in the Caucasus under the name *Tetrao caucasica* (Zoogr. Rosso-As. vol. ii. p. 76, pl.). Now, as the species of *Tetraogallus* found in the Caucasus is totally different from that which occurs in Persia and Asia Minor, and as these two species have not been found inhabiting the same mountain-range, it is evident that *T. caucasicus* cannot be regarded as a synonym of *T. caspius,* but must stand by itself.

The *Lophophorus nigelli* of Jardine and Selby (Ill. Orn. pl. 76) appears to have been founded on a female obtained from the same district as the bird described by Gmelin; and as the descriptions and figures agree sufficiently well, this name must be referred (as it already has been by various authors) to *T. caspius.*

Other specimens which have of late attracted attention are:—(1) a bird in the Museum of the Jardin des Plantes, originally received from Erzeroum, and described by M. Oustalet under the name of *Tetraogallus challayei* (Bull. Soc. Phil. 1875, p. 54, and Journ. de l'Inst. 1875, p. 353); (2) A series of specimens collected in the Taurus by myself, and upon which Mr. Dresser has based his *Tetraogallus tauricus* (P. Z. S. 1876, p. 675); and (3) a bird mentioned as inhabiting Armenia (?) by Herr Radde, and referred to without description by HH. Bolle and Brehm as *Megaloperdix raddei* (Journ. für Orn. 1873, p. 4).

All these three names are, without any doubt, synonymous. Specimens of *Tetraogallus tauricus* which have been compared with *L. nigelli* have been found to agree with that bird, and consequently with *T. caspius.* The three names given above are therefore synonyms of the original *T. caspius*; and, unless the specimen recently obtained in the Manrack Mountains by Messrs. Finsch and Brehm should prove to be new, the genus *Tetraogallus* at present consists of five species, viz. *Tetraogallus caspius* (Gm.), *T. caucasicus* (Pall.), *T. himalayensis,* G. R. Gray, *T. altaicus* (Gebler), and *T. tibetanus,* Gould.

Yours &c.,
C. G. Danford.

Gentlemen,—I send you the following note on Dr. B. Radakoff's recently published Hand-Atlas*, believing that it will not be uninteresting to the readers of 'The Ibis':—

About a week ago I was informed of the issue of the above work; and I received the first seven sheets to day. These include two title-pages, introduction (one page), four sheets of the Atlas, being four maps of Europe, Asia, and Africa on Mercator's projection, the whole elephant-folio size, and opening at the end. The land is shown edged with blue; and all the principal towns, rivers, mountains, &c. are shown. Upon these four maps there are marked the respective geographical ranges of *Tinnunculus alaudarius, Tetrao bonasia, Tetrao tetrix,* and *Upupa epops,* in red, thus:—

(1) Zur Bezeichnung der Gegenden im denen die Art nistet . . . . ||||||||||||||

(2) Zur Bezeichnung der Gegenden welche die Art bloss durchzieht . . . . =−=−=

(3) Zur Bezeichnung der Gegenden in denen die Art nur überwintert . . . . × × × ×

(4) Zur Bezeichnung der Gegenden in denen man mit Wahrscheinlichkeit das Vorhandensein einer Art voraussetzen kann, obgleich dafür keine literarischen Beweise existiren.

The work is to be continued, I understand, upon the same plan, giving a map for each of the species, and is issued by A. Lang of Moscow. As a valuable addition to our knowledge of geographical distribution, this exhaustive work should be in the library of every student of the subject.

My object in sending you this notice is not only that I may draw general attention to it, but also to point out that a series of papers, upon which I have myself been engaged, seem to me to supplement in an admirable way this larger and more elaborate work; and the symbols used by me, if added to those upon the maps, could be easily utilized to show the more minute particulars of distribution in minor areas upon a larger scale. I would in this connexion refer you to the following papers by me:—

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* Hand-Atlas der geogr. Ausbreitung der im europäischen Russland nistenden Vögel, zusammengestellt von Dr. B. Radakoff (H. Berghaus's Atlas der Thier-Geographie). First 7 sheets. Moscow: 1876.

"On an uniform Method of Registration for Observations on Natural History, especially as regards Distribution and Migration" (Proc. Glasg. Nat.-Hist. Soc. 1876–77). In the press.

"On the Distribution of the Birds of N. Russia.—Part I. The Latitudinal Distribution of Birds of N.E. Russia. Part II. The Longitudinal Distribution of Birds of N. Russia, north of 64° 30′ N. lat." (Annals & Mag. Nat. Hist. 1877.) Part i. in the press, part ii. in MS., part iii. in preparation[*].

JOHN A. HARVIE BROWN.

P.S. I may be allowed to add that I knew nothing of Dr. Radakoff's work until about a week ago, when I heard of it from Messrs. Friedländer & Sohn, Berlin.

Cobham, March 12, 1877.

SIRS,—As a very recently elected and extremely unscientific member of the B. O. U., it is with great diffidence that I ask leave to call attention to a neglected point in the natural history of the Wheatear (*Saxicola œnanthe*).

I allude to the two very distinct races of that bird, which I cannot help thinking fully as worthy of scientific recognition as the two races of Bullfinch (*Pyrrhula europæa* and *P. major*).

Indeed, as I propose to show, there is considerable analogy between the two cases, the larger race being in each case distinguished by a deeper colouring as well as by size.

The only authorities that I have been able to discover on the subject are Gould and Schlegel, other authors having failed to recognize any variation in the individuals of *Saxicola œnanthe* as generally recognized. Of these two authors Gould is the only one who gives exact measurements of the larger race; I therefore quote the following from his 'Birds of Great Britain':—

	Length. in.	Spread of wing. in.	Wing. in.
Large race . . .	6½	11⅝	4
Small race . . .	5¾	10¼	3½

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[*] Part iii. Longit. Dist. of Birds of N. Russia, between 60° and 64° 30′ N. lat.

Without giving his other measurements, these will be enough to show the proportions of the two forms. As regards the difference in colouring, that is easily stated. Both races assume in spring a grey back, a white forehead and eye-streak, and a darker wing; but while the smaller race changes from a reddish buff on the lower surface to *pale yellow-buff* on the throat and breast, and whitish on the abdomen, the larger race retains the deep reddish buff on the throat and breast, and if there is any difference between the autumn and spring colouring of these parts, it is that there is a richer glow of red about them in spring than in autumn.

It is clear therefore that, independently of size, the rich reddish throat of the larger bird distinguishes it at once from the paler bird.

It remains to say what little I know of the separate range and migration of this large race. It is soon told. I know nothing of the bird's occurrence west of Sussex; but it certainly appears every May on the shores of Sussex and Kent, and also on the opposite shores of the Continent (see Schlegel's 'Birds of Europe'). Schlegel says it appears "in the month of May." Gould obtained two specimens from Dungeness on May 9. My brother, Mr. Ivo Bligh, shot one in Cobham Park, near Gravesend, on May 1st. This last specimen agrees exactly in size and colour with Gould's life-size figure, and also with specimens at Swaysland's, the Brighton bird-preserver's.

On the whole, therefore, I am unable to see why such a distinctly large race, that retains a red breast in summer, and arrives on our south-east coast in May instead of March, should not be as worthy of recognition as the large brightly coloured Bullfinch of Eastern Europe.

Yours &c.,

CLIFTON.

Northrepps, Norwich,
20th March, 1877.

SIRS,—In 'The Ibis' for 1860, p. 171, for 1862, p. 207, for 1873, p. 324, I recorded the laying of a series of eggs in confinement by a specimen of *Vultur auricularis* in my possession; and I am now desirous of recording the death of this bird, which occurred on 17th March, 1877. This Vulture was purchased by me at the sale of the collection at the Surrey Zoological Gardens in 1855, and was then a fully adult and, apparently, rather an old bird. During the period that this Vulture lived in my possession she laid twelve eggs, but never more than one in a year; the earliest date of laying was that of the first egg, laid on 15th February, 1859, and the latest, of her last egg, laid 18th March, 1872.

I am yours, &c.,
J. H. Gurney.

Sirs,—In some interesting remarks on *Anthus gustavi*, Swinhoe (*anteà*, p. 128), Mr. Seebohm observes that this Pipit should be looked for in winter in the Philippine Islands, in the Malay archipelago. At page 117 of the Zoological Society's 'Transactions,' vol. viii., the occurrence of this species in Celebes is noticed, and its identity with *Pipastes batchianensis*, G. R. Gray, is recorded.

Yours truly,
Tweeddale.

Chislehurst, March 1, 1877.

*New Work on Madagascar and Mascarene Birds by Dr. Hartlaub**.—Under the title given above, the veteran ornithologist, Dr. G. Hartlaub of Bremen, has just issued a new and complete revision of the ornis of Madagascar and the Mascarene Islands. It is now fifteen years since the appearance of Dr. Hartlaub's former work on this subject, entitled 'Ornithologischer Beitrag zur Fauna Madagascars.' During this period great advances have been made in our knowledge of the ornithology of these countries, especially by the researches of A. Grandidier, Pollen and Van Dam, Edward Newton, and Crossley, nearly the whole of which Dr. Hartlaub has been able, through the kind aid of these naturalists, or that of the authorities of the museums in which their specimens have been deposited, to incorporate into the present work.

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* Die Vögel Madagascars und der Mascarenen, ein Beitrag zur Zoologie der aethiopischen Region.

As a frontispiece of the work (which consists of an octavo volume of 400 pages), a copy of a newly discovered original picture of the Dodo by Savary is given. We hope to give a more extended notice of this important publication in our next number.

New Work on Indian Birds.—Messrs. A. O. Hume and G. F. L. Marshall send us a prospectus of 'The Game Birds of India,' with "hand-coloured illustrations of all the known species," to be published early in 1878. The size will be that of Shelley's 'Birds of Egypt.' There will be four volumes, each with about forty plates, the price to subscribers in advance being £4 14*s.* 6*d.*, paid in England, or Rs. 54 in India. The first will contain the Peafowl, Pheasants, Jungle Fowl, and Spur Fowl; the second the Partridges, Quail, Bustard, and Florikin; the third the Pigeons and Sandgrouse; the fourth the Water-birds, Cranes, Geese, Duck, Teal, Snipe, Woodcock, &c. A fifth volume may, perhaps, be subsequently added, containing the Plovers and Waders, which, "though not actually Game Birds, often afford very excellent eating;" but only the four volumes enumerated above will be put in hand at once.

Exploration of Tenasserim.—Major Godwin-Austen, who is temporarily engaged in arranging the collection of birds in the new Imperial Museum at Calcutta, writes to us of a plan which has been started there for the collection of zoological specimens in the Tenasserim provinces. The services of a young Swedish collector, named Ossian Limborg, who had lately arrived in Calcutta, had been obtained with this object. After previous instruction, Mr. Limborg had been despatched, in company with a taxidermist and a native collector, on the 11th of December last to his destination. His first trip was to the high range of Moulé, east of Moulmain, about 5000 feet high, the base of which he reached on the 31st of December. Major Godwin-Austen writes on February 1, that

Limborg had hitherto done very well. His "first consignment, of some 200 birdskins, a few small mammals, reptiles, and fishes, and a lot of good insects, arrived a few days since, showing that he must have worked hard. We are going to send him another and better taxidermist. The duplicates will be sold to help expenses; and those who apply first will have the first choice."

Pitta versus *Brachyurus.*—Mr. Elliot, in his well-known monograph, uses the generic term *Brachyurus* for the great body of Pittas, *i.e.* those with short tails, and confines *Pitta* to the sharp-tailed section, containing *P. cyanura* and others. But there is no doubt this practice is indefensible. *Pitta,* as originally established in 1816 by Vieillot (Analyse, p. 42), is defined as ="*Brève*" of Buffon. Now Buffon's "*Brève*" contained only four species, all belonging to the short-tailed division.

Again, the type of *Brachyurus,* founded by Thunberg in 1821 (K. Vet. Ak. Handl. 1821, p. 370), is *Turdus triostegus* of the Museum Carlsonianum, which =*Pitta bengalensis* of the short-tailed section. Therefore *Brachyurus*=*Pitta,* and these names cannot be used for different genera.

Name of Falco dickinsoni.—In the first volume of his Catalogue of Birds (p. 447) Mr. Sharpe has altered the specific name of the Falcon described and figured in 'The Ibis' for 1864, and called *dickinsoni* (after its discoverer, the late Dr. John Dickinson, of the Oxford and Cambridge Central-African Mission), to "*dickersoni.*" This he appears to have done in consequence of what Mr. Gurney has stated, Ibis, 1869, p. 444. But I believe Mr. Gurney must have been mistaken. With the late Dr. Dickinson himself I never had the good fortune to be acquainted, but on referring to the correspondence which I had with his brother, Mr. R. Dickinson, of Jarrow-upon-Tyne, I find that my version of the family name is undoubtedly correct. I must add that Mr. Sharpe ought, in my opinion, to have stated in his 'Catalogue' the grounds upon which the change was made, as it might otherwise have been supposed to be a typographical error.—P. L. S.

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XXII.—*A Contribution to the Ornithology of Asia Minor.*

By C. G. Danford.

The following notes result from a trip to Asia Minor during the winter of 1875–76 and the ensuing spring. The list given in no way pretends to be exhaustive, and is only intended as a contribution towards the singularly scanty ornithological literature appertaining to this country. The number of species enumerated will probably appear small, considering the geographical position of the peninsula. It must, however, be borne in mind that, with the exception of a month's journey across the interior, the entire time was spent among the Cilician mountains, at elevations of above 3000 feet, and in districts devoid of marshes, and principally consisting of rocks and coniferous woods—conditions very unfavourable to the existence of an avifauna rich in species. Had we collected on the sea-coast-plains during winter, and remained until later in the mountains, a large number of waders, swimmers, and migrants would have been added to the list, as, indeed, previous experience had already shown us.

Altogether 138 species of birds were found in the mountains, and 47 more in the interior, making a total of 185. Of 156 of these species specimens were shot; and of the remainder examples were so closely observed as hardly to admit of any mistake in their identification having been made. Doubtful observations of Eagles, Hawks, &c. have not been included, most birds of those classes being extremely difficult to distinguish with certainty beyond a short distance. In the following rough sketch of the line of march it will be seen that the fauna and flora of the mountain-districts is, on the whole, very European in character, though connected by various well-marked forms with those of countries lying further to the east.

We left Smyrna Dec. 3rd, and after a very stormy passage arrived at Mersina early in the morning of Dec. 7th.

There was still a heavy swell on, which made the landing rather difficult; sometimes, when the south wind blows strong, it is impossible. However, thanks to the kind offices of Mr. Tattarachi (H.B.M. Vice-Consul), we ourselves and our baggage were landed, the customs passed, and horses got ready for the afternoon ride to Tarsus. The distance to that town can, at a sharp pace, be got over in three hours, the road being a good one, passing over a level plain, some of which is devoted to cotton-cultivation, but the greater part is waste land. Among the myrtles, rushes, and low scrub which cover it Francolins (*Francolinus vulgaris*) are reported to be very plentiful; and the large lagoons in the distance, which in old times connected Tarsus with the sea, are said to swarm with wildfowl. On the wayside Eagles, Buzzards, Harriers, Ravens, Hooded Crows, Rooks, various Larks, and a few flights of Plover were the principal birds seen.

From Tarsus excursions were made to the Dunek Tash, the reported tomb of Sardanapalus, and the waterfalls of the Cydnus. About the orange-gardens surrounding the former a few small Warblers were observed; and the neighbourhood of the latter was frequented by Kingfishers (*Ceryle rudis* and *Alcedo ispida*) and Wagtails (*Motacilla melanope* and *M. alba*). Above these celebrated falls most of the water is led off for mill-purposes; the remainder, after a fall of about 15 feet over the conglomerate rock, flows on through a deep narrow channel of the same formation. The water is certainly remarkably cold, and seems to hold plenty of fish.

A couple of days sufficed to get things in order; and we then left Tarsus for Gozna, a village in the mountains, the "yaila" or summer-quarters of the richer city-people during the pestilential summer heat. The way lies at first parallel to the Mersina road along the plain, but soon turns off into a country made up of a number of small hills, partly rocky and partly earthy. Here the little flats between the hills were gay with pale mauve colchicums, and the slopes were thickly covered with tall heaths, daphne bushes just coming into flower, and myrtles already in bloom. The birds seen on the way were principally Larks (Calandra and Crested), Chaffinches, and large flocks of Corn-Buntings. A birdcatcher whom we encountered had his net full of live Starlings.

After passing a small stream and a ruined tower the road became rougher, and rapidly ascended into a higher country, over alternate hills and ravines, both well covered with thorny bushes, myrtles, and other evergreens. A few fir trees were scattered about; and occasional glimpses were caught of the sea on one side and the snow-hills on the other. As evening came on, Partridges (*Caccabis chukar*) enlivened the way with their cackling, Jays (*Garrulus krynickii*) screamed, and numbers of Blackbirds and Thrushes fed busily on the sweet aromatic myrtle-berries. These berries are by no means bad, the white and scarcer kind being, as white fruits usually are, much the best. A hunt after a flock of strange-looking birds, which turned out to be Bulbuls (*Pycnonotus xanthopygius*), took up so much time that the last two hours of the way were done by moonlight, which made the scenery of the woods and great rocky ravines, by which we led our horses, look doubly wild and mysterious. Gozna is at a high elevation, and, with the exception of the good stone building kindly placed at our disposal by Mr. Debbas (American Consul at Tarsus), consists of a number of straggling wooden houses. Its position in a draughty gap of the hills is, no doubt, agreeable in summer, but makes it any thing but a pleasant winter residence. Birds seem to be pretty much of this opinion too, as the species found in the surrounding woods were few and far between. These woods mostly resemble the coverts in the hilly parts of Devonshire. Oak trees, ivy-bound and clematis-hung, form the staple growth. Mixed with these are a good many evergreens and an undergrowth of thorn and bramble, which creeps and twists about a debris of bluish grey limestone patched with rich green moss. Higher up are tall spruces and junipers (*Juniperus drupacea,* Labill.). The fruit of the latter species is abundant and very ornamental, almost as large as a walnut, and covered with a pale blue bloom, like a ripe plum.

These woods are doubtless in summer well stocked with birds. In winter they are principally inhabited by Woodpeckers (*Gecinus viridis, Picus medius, P. lilfordi, P. minor*), Nuthatches (*Sitta cæsia, S. krueperi*), and Tits (*Parus major, P. lugubris, P. cæruleus, P. ater,* and *Acredula tephronota*). The last-named species, and also the Gold- and Fire-crested Wrens, were very common in a wood of mixed beech and oak to the east of Gozna. This wood was further remarkable as being of a singularly weird appearance, the rocks and the lichens upon them, the branches and stems of the trees, and the long beard-like mosses which hung from them, being all of an almost unvarying tint of pale grey.

During our stay at Gozna there was plenty of hard frost and several heavy falls of snow, and it was with great difficulty that horse-owners were induced to go further up into the hills. However, the chief of a small village near by did at last get together the necessary men and animals, and we left for Zebil on January 3rd. The distance to that village is, as the Crow flies, short; but the snow which lay on the upper levels, and the crossing of the deep valleys of Dermen deresi (mill valley) and Pambouk deresi (cotton valley), made the tramp rather a long one. Flocks of Hawfinches, Goldfinches, Skylarks, and Pipits were met with on the way; and numbers of Fieldfares and a couple of Eagle Owls were seen in a great forest of firs, through which the path led by a descent of 2400 feet to the bottom of the Pambouk deresi, along which flows the western branch of the Cydnus. The stream was crossed by a picturesque bridge; near by were some wet rocks covered with Hart's-tongue fern (*Scolopendrium vulgare*)—a very rare species in Asia Minor. A rise of 1700 feet by zigzags up the one practicable cleft in the rocks of the north side brought us near Zebil, in which village much time was destined to be lost through the occurrence of certain casualties, and in fruitless efforts to obtain *Tetraogallus.*

Zebil is the westernmost village on the south side of the Bulgar dagh. Its elevation is about 3500 feet. Close behind it rise the high hills; and in front is the deep ravine and river just alluded to. Though unnamed on the maps, this stream has certainly a larger body of water and quite as long a course as the branch to the eastward, and therefore seems as fully entitled to the classic name of Cydnus. Its origin is reported to be in the wall-like barrier of the Bulgar-dagh at the head of the Chojak deresi. There it is said to spring from the rock in great volume, with a fall of about 20 feet. The deep snow prevented a visit to this spot, which is further remarkable for the remains of an ancient town, as yet apparently unexplored. The natives say that the position of the streets can be clearly traced, and that other ruins exist among the hills.

The river itself bears no name in this district, but is called by those given to the different bends of the ravine through which it flows. These are Chojak deresi, Jehannum deresi, Pambouk deresi, and so on. After entering the plain it is known as the Tersous-tchai. Vertically considered, these ravines are, in their lower depths, clothed with various oaks and evergreen shrubs, which higher up give place to spruces, red firs, white firs, and finally to cedars and junipers. There is but little life in the upper regions—the winter resort of the ibex and a few predatory animals. An occasional Lämmergeyer or Golden Eagle swoops about the crags; the cries of the Peregrine and Raven, or the aerial consultations of a party of Alpine Choughs, are heard now and again. Often nothing breaks the stillness but the tapping of a stray Woodpecker or the notes of Krüper's ubiquitous Nuthatch. The part of the ravine immediately below Zebil is called Jehannum deresi (Valley of Hell). The only path to the bottom leads by sharp zigzags down to a small mill. The aneroid gave the depth of the descent as nearly 2000 feet. The scenery of the valley itself is beautiful; and it is probably with reference to the return ascent that it has received its name. The change of temperature on reaching the river was great. Above was winter and snow, below warm spring, with butterflies (*Gonepteryx rhamni*, var. *farinosa*) flitting about, and primroses, violets, and snowdrops in full bloom. The stream is about the size of a good Scotch burn, and in some places tumbles wildly about among large boulders, and in others forms long gravelly runs and deep rock-shadowed pools. The water is very clear and of a greenish colour. It absolutely swarms with trout (*Salmo fario*, var. *ausoni*), called by the natives 'Pulu baluk' (spotted fish). They are very good-shaped fish, running about three to the pound, and are of a most unsophisticated nature, taking freely any fly offered to them. A mile below the mill the stream enters an impassable gorge and emerges into the Pambuk deresi. Here the trout are much less numerous, no doubt owing to the presence of numbers of mountain-barbel or 'Jonuz' (*Capoëta syriaca*). Birds are scarce in this region. A few Water-ouzels hurry up and down; troops of Long-tailed Tits disport themselves in the tops of the plane trees, whose green-grey stems are here, contrary to their ordinary habit of growth, tall and slim. Add to the above birds some common Tits, Hedge-Sparrows, Thrushes, a solitary Kingfisher or Sandpiper (*Totanus ochropus*), with a few Wild Ducks, and the winter ornithological resources of the place may be regarded as nearly exhausted.

The country about Zebil between the ravine and the mountains is irregular, and made up of low hills, chiefly formed of conglomerate and limestone. Fossils, especially oysters and echinoderms, are abundant. Deep earthy gullies intersect the ground between the small flats, which are, for the most part, cultivated. Tracts of heath and brushwood afford shelter to numerous Hares (*Lepus syriacus*), Partridges, and a sprinkling of Woodcocks. Most of the large game inhabit the lower and warmer districts. The natives of the Zebil are all Turks; and great reputation attaches to a good sportsman. On most Fridays there is a general hunt, in which all the boys and able-bodied men are expected to join. Any one who absents himself is made to ride round the village on a donkey, and has mud put on his face. In aggravated cases his house is pulled down.

We left Zebil February 26th, having up to that time identified eighty species of birds. These, with one or two exceptions, were all either residents or winter visitors.

On leaving Zebil our way lay through hilly ground, past the isolated rock of Nimroun, on the summit of which is an old Armenian castle. The village is at the base of the rock, and is a favourite "yaila" of the people of the plain. Scattered all round are numerous "chardaks" (wooden houses), each standing in its own ground, and surrounded by vineyards, and orchards of plum, cherry, apricot, peach, and walnut trees. Further on, the eastern branch of the Cydnus was crossed. This stream flows through a deep ravine, also called "Jehannum deresi;" but the scenery, though wild and picturesque, is not so grand as that of the other branch described above.

The ascent of the opposite side, through fir-woods, brought us to the village of Gænsin, a small place prettily situated in a well-wooded country, and commanding fine views of the highest peaks of the Bulgar-dagh. Here we remained a few days, without adding much to our collection, until the morning of our departure, when a man arrived with a pair of *Tetraogallus.* He had been out three days on the snow, and was as much delighted at beating all other competitors as with receiving the promised reward.

The birds were at once recognized as not being identical with the species from the Caucasus; and as we were not then acquainted with the Persian bird (*T. caspius*) we took them to be a new species, and accordingly went on our way with much rejoicing.

The road lay by the celebrated pass of Gulek and the now abandoned castles and earthworks constructed by Ibrahim Pasha for the defence of this important position, which commands the defile of the Taurus known as the Cilician gates (Pylæ Ciliciæ). Cannon and cannon-balls lay half imbedded in the ground, attempts to remove them having failed. The road is here along a valley, the north side of which is bounded by the Bulgar dagh, and the south by the rocky mountains of Anascha. The village of the same name is situated on the north face of the mountain overlooking the valley of the Sihoun. The elevation is about 4000 feet; and the views on all sides are very fine, especially to the north-east, where rise the rocky walls and peaks of the Ala dagh. The latter range is divided from the Anascha dagh by a branch of the Sihoun (*Sarus*). On the opposite side of the valley only firs grow, and it has rather a burnt-up look; but on the Anascha mountains vegetation is much more luxuriant, and almost all the kinds of trees found in the Taurus are there represented. Conifers hold the chief place. The most abundant of these are "kizil cham" (red fir, *Pinus laricio*, Poir.) and the silvery barked "ak cham" (white fir, *P. fenzilii*, Ant. et Key), which takes the place of the former at about 4000 feet elevation. Clumps of "eladin" (spruce, *Abies ciliciæ*) are pretty numerous; and higher up on the steep rocky slopes are the dark silent "kartaran," or cedar-woods. These, together with scattered stems of "ardytch" (*Juniperus excelsa*), form the uppermost growth. This juniper is often of enormous size, some measured at Zebil having, at a yard above the ground, a circumference of more than 18 feet. The wood is of a red-brown colour, highly scented, and splits with great ease and smoothness. Two other smaller junipers are also common—the red-berried "tikian ardytch" (*J. rufescens*) in the lower, and the strong-smelling juniper (*J. fœtidissima*) in the upper elevations.

Next in importance are the oaks, here in great variety, but very difficult to distinguish when devoid of leaves and fruit. At the opening of spring, flowers appear in wonderful profusion. Of *Crocus*, at least five kinds are common; and other beautiful genera, such as *Scilla*, *Bellevalia*, *Muscari*, *Hyacinthus*, and *Xiphion*, are well represented.

We remained at Anascha from March 3rd to April 18th, adding during that time thirty-seven species to our list. Most of these were migrants, the first to arrive being Chats (*Saxicola erythræa* and *S. isabellina*). These were quickly followed by Hoopoes and Thrushes (*Monticola cyanus* and *M. saxatilis*), more Chats (*S. œnanthe* and *S. melanoleuca*), Swifts (*Cypselus melba*), and Warblers (*Sylvia rueppelli* and *S. garrula*). Birds were most numerous about the mixed woods, least plentiful at the river-side, which one would have expected to have been the natural highway of immigration.

The next halting-place after leaving Anascha was Giaour-keui, at the base of the Karanfil dagh. This mountain is lofty, narrow, and very precipitous, the direction of its mass being transverse to the general chain of the Ala dagh, of which it forms part.

The week spent at this little village was chiefly devoted to seeking for the nests of Ehrenberg's Redstart (*Ruticilla mesoleuca*), the Red-fronted Serin (*Serinus pusillus*), and the Snow-Partridge (*Tetraogallus caspius*). All of these quests were happily successful; and as fuller details of the character of this part of the country will be given in connexion with the above-mentioned birds, there is no necessity to enlarge upon it here. We left Giaour-keui April 29th, and joined the main track to Kaisariyeh at the bridge of Melimen. From this point the road follows the south bank of the river Korkun, passing by the isolated hill of Masmeno and under the huge walls of the Demir-kasek (iron rod). Heavy mists hung low down the mountain-sides and prevented us seeing the full grandeur of the scenery. The country was here much colder and barer, and the vegetation far less advanced. The low hills on the other side of the river were quite barren; but their local colouring was striking and very beautiful, being a harmony of rich brown-purples and grey-greens.

We diverged from the track to pass the night at Bereketlü (place of blessing), formerly celebrated for its lead-mines. From here the view of the Apisch-kar and the other wild and jagged mountains of the Ala dagh is very fine. The place itself is divided into two parts, Christian and Turkish. It is well-watered, having willow trees and hedges, in which a few

Turtledoves and Cetti's Warblers were observed; and our house was the abode of hundreds of Rock-Sparrows (*Passer petronius*). On the bare hills near by a good many Horned Larks (*Otocorys penicillata*) were met with. They were evidently breeding here; but having a long stretch to make that day, and expecting to find them further on, we did not stop to look for nests. As often happens in such cases, we never saw them again.

From Bereketlü to Develü-kara Hissar (the Black Castle of the Place of Camels) is two good days' march. The way is at first over low hills, chiefly barren, but having a few trees and hedges near the villages. Little marmot-like animals (*Spermophilus xanthoprymnus*) swarmed everywhere, and nearly drove our retriever Polo to distraction; he evidently taking them for a small species of rabbit. Magpies built wherever they could find a place; and in a small marsh were plenty of Black-headed Wagtails, Red-throated Pipits, some Lapwings, and a few Ruddy Sheldrakes, which waddled about in a most unconcerned fashion. After passing the village of Enehül the country becomes more grassy, and is traversed by long lines of dark igneous rocks, in which breed numbers of Raptorial birds.

We halted at the curious little village of Gördilas, which is built half in and half out of the rocks, and plastered everywhere with "kerpez" (round dung-cakes) for winter fuel. Before leaving in the morning we visited a nest of Sea-Eagles, which was not yet laid in, one of *Buteo ferox*, which contained four deeply incubated eggs, and a Golden Eagle's, in which was a very young nestling and a yelkless egg. The female was knocked over with a broken wing, and made with her claws deep impressions on an incautious member of our party. Small birds, particularly of the Lark and Swallow tribes, swarm in this locality; and the Crimson-winged Bullfinch (*Erythrospiza sanguinea*) was here first observed. Passing through a small rocky valley frequented by Arabian Chats (*Saxicola erythræa*), one suddenly comes in sight of the Erjdias dagh, the highest mountain of Asia Minor. Its sharp snow-covered cones, and the broad expanse of water and marshy levels at its base, form a splendid picture. Mount Argæus is isolated from the range of the Antitaurus, and is of volcanic origin. Its height is 12,000 to 13,000 feet*, being above the limit of perpetual snow. There are, however, no glaciers, either on the Argæus or in any part of the country. Develü-kara Hissar is a small place overlooked by a ruined castle. It would make a capital collecting-station, being surrounded by large gardens, and close to the lake and the rocky steppe country.

Beyond the town the track passes at first near the water over a monotonous dead level, which is thickly covered with grass and stubby plants. Red-backed and Lesser Shrikes were common here. Myriads of Calandra and Short-toed Larks sprung up at every step; and flocks of Orange-legged Hobbies hovered overhead or pitched on the little hillocks which dotted the plain. A few hills have to be crossed before reaching Inje-su (Narrow Water). This town fills up a rift in the volcanic rock, and must in summer be a perfect furnace. In the beginning of May it was more like an oven than any thing else. From Inje-su to Kaisariyeh the way lies over low lava-covered hills, and sometimes by the side of a large marsh. Here Ducks, Pratincoles (*Glareola pratincola*), and a species of Tern, probably *Sterna nigra*, were seen. There were also a few Stork's nests, in the foundations of which numbers of Spanish Sparrows were building. This marshy lake is principally fed by a number of large springs, which rise round its margin.

Kaisariyeh, the ancient Cæsarea Mazaca, is situated upon the level ground to the north of Mount Argæus. It contains many mosques, very well-built bazaars, and a large battlemented castle, the inside of which is filled up with houses. Just outside the town are some curious ruins; and the feet of the hills, a couple of miles off, are covered with gardens containing vines, apricot-, pear-, and apple-trees, and a sweet-smelling shrub, from the red berries of which a tamarind-tasted sherbet is made. They are also well-stocked with birds, especially with Buntings (*Emberiza melanocephala* and *E. hortulana*) and Warblers (*Sylvia orphea* and *Cossypha gutturalis*). A fishing-excursion to the small lake of Kabat-geul resulted in the capture of sundry pike with dark purple fins and a lot of ordinary roach. Numbers of snakes were swimming about; and frogs and tortoises were in legions. Specimens of Great Sedge-Warblers, Spotted Flycatchers, and Penduline Tits were the additions to our collection.

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* The mean of Hamilton's and Tchihatcheff's measurements is 12,666 feet.

We left Kaisariyeh May 8th, and made a direct march north to Samsoun, on the Black Sea. At Erkelet and Kemer, the first villages on the way, flocks of Bee-eaters (*Merops apiaster*) made their appearance, and a few Woodpeckers were seen, which we could neither shoot nor identify. They seemed, from their size, to be *Picus lilfordi*; but the locality is an unlikely one for that species. Here were a few vineyards and orchards, and by the wayside grew patches of wild yellow roses and jasmines; but as the valley of the Kizil Irmak (Red River) was neared the country became more barren. The river is dirty and rapid, and about eighty yards wide where it is crossed by the long stone bridge, at the north end of which is a singular-looking village. The houses are mostly excavated in the rocks; and it is very aptly called by the Turks "Chock-guez" (many eyes).

Beyond this river the country as far as Aladja is, for the most part, a dreary undulating plateau, covered with grass and stones. Here and there are miserable villages, with a little cultivation and a few small trees about them; and on the better pasture-lands one meets with large encampments of black Kurdish tents.

In other districts there are plenty of flowers, especially in narrow defiles, where there is some shade from the fierce sun. In such places grow quantities of beautiful short-stalked irises of two colours (dull buff and maroon), gladioli, wild scentless mignonnette, a pale slate-coloured flax, large patches of convolvulus, the rare *Ixiolirion montanum*, and many other plants. Butterflies are very numerous, most of the European genera being well represented by only slightly varying forms.

The stock birds are the Isabelline Chat and Larks (Short-toed, Crested, and Calandra). Jackdaws live about the villages; and numbers of Sand-Grouse (*Pterocles arenarius*) cut the air with their sharp swift wings. A few of their nests were taken, all containing the usual complement of three eggs. The way was further enlivened by the plundering of a Bustard's nest (*Otis tarda*) and those of certain Eagles, chiefly *Aquila imperialis*. After passing the wretched village of Aladja, the character of the landscape changes; the hills are higher, and are covered with a thick growth of oak-scrub. At our halting-place of Baba Eyoub-tekessi there was capital ground for Warblers; and after a shower the hills resounded with the songs of Nightingales, Barred and Orphean Warblers, and Robin Chats, all performers of the first order.

From here to the old Mussulman town of Tchorum numbers of Rollers, Bee-eaters, and Rosy Pastors were met with:

Tchorum was reached May 15th. Hitherto the weather had been fine and very warm. Frequent showers now fell, which soon increased to tremendous thunderstorms, accompanied by hailstones and heavy rains. This state of things, which lasted all the way to the coast, made travelling difficult and roadside collecting impracticable. Between Tchorum and Mersiwan we crossed hills covered with oaks, hazels, *Syringa*, barberry, roses (pink, yellow, and white), and hawthorn in full bloom.

The latter town is the ancient Phasemon. It is prettily situated at the base of a range of mountains, and surrounded by large gardens and fine old walnut-trees. Beyond it the mud had made the roads so difficult that our guides diverged from the ordinary path and, by long detours over the hills, brought us to the *watering-place* of Kausa. Here half a dozen enormous khans, crowded with a motley assemblage, were grouped round the baths. These hot springs, which were well known to the ancients, are said to be very effectual in curing many complaints. They are protected by domed buildings, are large in volume, and have a temperature of 125° Fahr. Leaving the hubbub and dirt of Kausa behind us with much pleasure, we rode to the prettily situated khan of Ak Soo deresi (white-water valley). The country is covered with copses; and numerous Circassian villages are scattered about. Cirl Buntings and Rosy Finches (*Carpodacus erythrinus*) were for the first time met with, and a good many birds of prey seen.

On the descent to the Black Sea, which occupied two days more, our road lay through large forests, principally composed of beech and oak, with an undergrowth of the golden-flowered *Azalea pontica*. Samsoun was reached on May 22nd. Our intention had been to stop here and collect; but finding that little or nothing was to be done in that way, we left for Constantinople by the first steamer.

Before passing to the next part of this paper we must acknowledge the hospitality and courtesy received from all races and classes, especially from the mountain-tribes of Turks and Yorouks, among whom most of our time was passed. Nothing could exceed the unvarying kindness of Mr. Tattarachi, H.B.M. Vice-Consul at Mersina, to whom we take this opportunity of tendering our most hearty thanks, as also to Mr. Dresser and to Mr. Baker of Kew, for the aid they have rendered us in naming our birds and plants. We would further beg leave to recommend to the ornithological world our assistant, Mr. William Pearse, of Haskeui, Constantinople, who accompanied us, and to whose diligence and care the good preservation of our collection is entirely due.

[To be continued.]

XXIII.—*Recent Observations on the Parrots of the Genus* Eclectus. By W. A. Forbes, F.Z.S.

The large red and green Parrots forming the genus *Eclectus* of Wagler have long been well known to naturalists, who have, until recently, entertained no sort of doubt that the red species were perfectly distinct from the green ones. So much was this the case, that a subgenus, denominated *Polychlorus* in 1857 by Sclater*, has been formed for the reception of the green species, the red ones being retained under *Eclectus* proper. Dr. Finsch, whose excellent work, 'Die Papageien,' must be regarded as our "Standpunkt" in all matters concerning Parrots, recognizes (*l. c.* vol. ii. p. 332) seven species of the genus (as restricted by Wagler), and gives the following table of them :—

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* P. Z. S. 1857, p. 226.

a. *Green Eclecti.*

1. *polychlorus,* Scop. Under wing-coverts and sides red. Wing 10″ 5‴.
2. *intermedius,* Bp. Like the last, but green darker and size smaller. Wing 8″ 9‴.
3. *westermanni,* Bp. Like the last, but without red on sides.

b. *Red Eclecti.*

4. *grandis,* Gm. Band over the upper back and the under surface violet-blue; tail-feathers and under tail-coverts yellow. Wing 10″ 3‴.
5. *cardinalis,* Bodd. Like the last, but darker red; under tail-coverts orange-red. Wing 8″ 5‴.
6. *linnæi,* Wagl. Like the last, but with a narrow blue ring round the eye; under tail-coverts red.
7. *corneliæ,* Bp. Without any blue at all.

The distribution of the species (as given by Finsch) is represented in the following table, the habitat of two species (*E. westermanni* and *E. corneliæ*), both originally described by Bonaparte from specimens living in the "Natura-Artis-Magistra" Gardens at Amsterdam), being still unknown.

	Ceram.	Bouru.	Amboyna.	Ternate.	Gilolo.	Batchian.	Morotai.	Guebè.	Waigiou.	Mysol.	Gage.	Kaisa Island.	Ké Islands.	Aru Islands.	New Guinea.	N. Ireland, &c.
Eclectus																
polychlorus	. .	. .	. .	*	*	*	*	*	*	*	. .	. .	. .	. .	*	*
intermedius	*	*	*	. .	. .	. .	. .	. .	. .	. .	*	. .	. .	*		
grandis	. .	. .	. .	*	*	*	*	. .	. .	. .	. .	*				
cardinalis	*	*	*													
linnæi	. .	. .	. .	. .	. .	. .	. .	*	*	*	*	. .	*	*	*	*

This being the case, ornithologists were not a little surprised when Dr. A. B. Meyer announced, on his return to Europe from his adventurous travels in New Guinea and the adjacent islands, that the green species of *Eclectus* were simply the males of the red ones—also that all the so-called species were, in his opinion, referable to one species, and one only, namely *Eclectus polychlorus.* In his paper on this subject in the 'Zoologischer Garten' for May 1874, p. 161, Dr. Meyer says that his attention was first called to the matter by finding that he had determined all the specimens, six in number, of the *E. polychlorus* (green) that he had procured in the Papuan island of Mafoor (in Geelvink Bay) as *males,* whilst nine *E. linnæi* (red) were all *females.* Struck by this curious coincidence, he inquired of his Malay hunters if they knew any thing of the matter. They replied that it was a well-known fact that these green and red Parrots were man and wife. One asserted that he had seen parents of both colours engaged in incubation, one replacing the other. Though Dr. Meyer, warned by former experience, did not trust implicitly to any statements made by his native hunters, these accounts strengthened him in his suspicions; and he determined to investigate the matter thoroughly. Three green *Eclecti* he obtained in Jobie were all males, three red all females. These results were afterwards fully confirmed by the examination of a great number of specimens on the mainland of New Guinea. These were too numerous to bring all back to Europe; but he returned with thirty specimens of the genus, four of which were preserved entire in spirits of wine, as well as a living pair of birds (green and red). To place the parallelism in the distribution of the red and green forms (already noted by Finsch, *l. c.*) in a stronger light, he divides the *Eclecti* into three groups, of which *E. corneliæ* and *westermanni* (the habitats of which are, as already remarked, unknown) constitute one. The other two are:—

polychlorus (green)	New Guinea, Waigu, Mysol, Gebè, Gilolo, Batjan, Morotai.
linnæi (red)	
grandis (red)	

intermedius (green) *cardinalis* (red)	Ceram, Amboyna, Buru.

From this it is clear that "the range of *one green* form (*E. polychlorus*) corresponds with that of *two red* ones (*E. linnæi* and *E. grandis*). "As I cannot hesitate a moment," says Dr. Meyer, "in ascribing the conditions found in *E. polychlorus* and *E. linnæi* from New Guinea, Mafoor, and Jobi to the other allied form (namely, that the green are the males and the red the females of one and the same species), the interesting fact comes out (unparalleled, so far as I know, in the ornis of the whole world), that *differently coloured females correspond to one and the same male in different localities*; for *E. linnæi* and *E. grandis* show at first sight such differences, that, so long as we did not know their true relations to *E. polychlorus*, they were universally considered different species. Thus, therefore, the male remains constant, whilst the female varies." Dr. Meyer then proceeds to show that no theories of "sexual" or "natural selection" can account for these facts, of the causes of which we are completely ignorant. Schlegel (Ned. Tijd. v. d. Dierk. iii. p. 332, 1866), he observes, has already united *E. intermedius* and *E. polychlorus* into one species, the examples from Gebè and Waigiou being intermediate in their characters between these two forms. Moreover an authentic specimen of *E. intermedius* from Ceram, received from the Leyden Museum, and now in the Imperial Cabinet at Vienna, quite agrees with Dr. Meyer's series from New Guinea, Mafoor, and Jobi. Hence *E. polychlorus* (including under this term *E. intermedius*) possesses in different islands three females, differently coloured according to the locality, viz. :—

(1) *linnæi*, in New Guinea, Mysol, Waigiou, and Gebè;
(2) *grandis*, in Gilolo, Batjan, and Morotai;
(3) *cardinalis*, in Ceram, Buru, and Amboyna.

Dr. Meyer then goes on to argue that *E. westermanni* and *E. corneliæ*, both remarkable for being nearly uniform in colour, must also be regarded as forms of *E. polychlorus*. He urges that *E. corneliæ* may well be a fourth female of *E. polychlorus*, as we already know that the females of this species are variable, whilst *E. westermanni*, he considers, is probably an individual that has retained its juvenile plumage and has been unable to assume its adult colouring owing to captivity.

Here I must join issue with Dr. Meyer on several grounds. First of all, several examples of each of these condemned species have lived at various times in the Zoological Gardens of London and Amsterdam, and no noteworthy difference has been detected in these specimens. Again, specimens of both species have lived for considerable periods at Amsterdam without undergoing any change in coloration (*vide* Finsch, *l. s. c.*). Moreover Parrots, as a rule, including those of the present genus, do remarkably well in captivity, and show no tendency to lose or to fail to acquire their brilliant colours or to retain their immature dress. *Eclectus corneliæ* and *E. westermanni* can hardly be man and wife, owing to their disparity in size (the wing of the former being given by Finsch as 9″ 5‴, of the latter 7″ 8‴ to 8″ 5‴, and other measurements in proportion). Hence we may conclude that in the former case the *male*, in the latter the *female*, remains to be discovered, as well as the exact habitat of each. When we reflect on the little knowledge we still have of the great mass of New Guinea, as well as of some of the neighbouring islands, it is evident that ample area for such a discovery is still left. This conclusion is strengthened by the fact that certain other Parrots belonging to the same region, likewise first described from captive specimens, and undoubtedly distinct (e. g. *Lorius tibialis*, Scl. P. Z. S. 1871, p. 499, and *Trichoglossus mitchelli*, G. R. Gray), have their exact habitat still unascertained. The recent discovery of Loriinæ (a group of which the geographical range coincides remarkably with that of *Eclectus*, as has been pointed out by Mr. Wallace) in such unexpected localities as Ponapé (in the Caroline group), where *Chalcopsitta rubiginosa* occurs[*], and Fanning Island, in the mid Pacific[†], renders it even possible that an *Eclectus* may turn up in some equally "unlikely" locality[‡].

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[*] *Vide* Finsch, 'Journal des Museum Godeffroy,' Heft xii. 1876.

[†] *Coriphilus kuhli*, P. Z. S. 1876, p. 421.

[‡] Prof. Rietmann's "shining-red Parrots" in Guadalcanar (P. Z. S. 1869, p. 127) might well be *E. corneliæ*.

Dr. Meyer then goes on to show that Bernstein's determinations of the sexes of the specimens he forwarded to the Leyden Museum are probably erroneous, as in his three years' experience he found the sexes about equally numerous, whereas Bernstein's determinations would show great disparity in their relative abundance (in one case six males to one female, in the other twelve females to two males). The juvenile plumage of *Eclectus* is unfortunately still unknown; but Dr. Meyer concludes that it is probably green, from the fact that twelve out of fourteen of his red specimens still preserve evident traces of green feathers.

In reply to these arguments Prof. Schlegel* not unnaturally hesitates to accept Dr. Meyer's conclusions, because, of 72 specimens of red *Eclecti* in the Leyden Museum, 20 have been determined by the collectors as *males*, and the remainder (52) as females, and, on the other hand, of 77 green specimens in the same museum, 56 are marked as males and 21 as *females*. Hence, if Dr. Meyer be right, a considerable proportion of these specimens must have been wrongly sexed by the four travellers by whom they were collected, viz. Salomon Müller, Bernstein, Hoedt, and Von Rosenberg.

Dr. Meyer returns to the charge in a paper in the 'Mittheilungen aus dem k.-k. zoologischen Museum zu Dresden' (*l. c.* p. 11–13). He repeats his former observations, and gives some additional ones, amongst which are some remarks on a living pair of *Eclectus* in his possession, green and red, the green bird on being introduced to the red at once having become friendly with the latter. A green *Eclectus* that died soon after it came into his possession was dissected and turned out to be a male. As regards the specimens in the Leyden Museum, Dr. Meyer disposes of them by saying that those collected by S. Müller have been long in the Museum, and may very probably have had their labels transposed—that Bernstein, during the latter part of his residence in the Malay archipelago (as he himself learned from one of his hunters, who had also collected for Bernstein, and knew the latter well), suffered severely from illness, and therefore may well have made mistakes in the determination of the sexes of his specimens—that Hoedt had no pretensions to any scientific knowledge—and that Rosenberg has in other instances made blunders of a similar kind—so that their evidence counts for little. Dr. Meyer adds some mathematical calculations showing that the chances are 32,700 to 1 against his having killed six all males of the green *Eclectus*, and nine all females of the red one in the same island, if they really were distinct species.

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* Mus. Pays-Bas, Psittacidæ, 1874, p. 17.

So far Dr. Meyer. Important evidence in corroboration of part of his theory is given by the Italian naturalists who have lately visited New Guinea. Beccari, in his Ornithological Letters to Count Salvadori*, says, "Though it seems strange, it is nevertheless true that the green *Eclecti* are males of the red ones. I learnt this at Aru from my hunters; and the young have the same differences." Salvadori says again (*l. c.* pp. 756, 757), speaking of the sexual differences in *E. grandis*, that there is "no longer any doubt on this subject. D'Albertis has assured me that it is a well-known fact amongst the natives of the Moluccas and New Guinea." In his various papers on Papuan ornithology in the same journal, the green specimens of *Eclectus* are always determined as males, the red as females.

Prof. Garrod also tells me that during his prosectorship the only two *Eclecti* that have died in the Zoological Society's Gardens were one *E. polychlorus* and one *E. grandis*, respectively male and female. On the other hand, the Rev. George Brown, C.M.Z.S., who has lately sent over to this country such interesting collections from New Britain and the adjacent islands, says, in a letter to Mr. Sclater, dated Sydney, October 22, 1876, "This" (*i. e.* the green and red *Eclecti* being specifically identical) "is a *gross error*. Our attention was directed to this subject; and I am quite sure they are two different birds. We shot the green ones, both male and female." Two skins in the collection are referable to *E. polychlorus* and *linnæi*; the latter is marked female. It is to be hoped Mr. Brown will renew his investigations into this subject, as the determination of the sexes is not always very easy without careful dissection, the suprarenal bodies in birds being particularly liable to be mistaken for the testes when the latter are not developed to the extent that they are during the breeding-season. On the whole, I think, we must conclude, in company with Dr. Meyer and Count Salvadori, that the green *Eclecti* are really males, the red females.

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* Ann. Mus. Civ. Storia Natur. Genova, vol. vii. p. 704, 1875, and Ibis, 1876, p. 253.

With regard to Dr. Meyer's conclusion that all the species hitherto described must be regarded simply as forms of *one* species (*E. polychlorus*), I have already adduced reasons for believing that *E. westermanni* and *E. corneliæ* are good species. As regards the other five, a careful examination of a large series of skins from different localities (we now know that *Eclectus* extends east as far as Yule Island and Duke-of-York Island) will be necessary before coming to any definite conclusion on the subject. Count Salvadori, however, who has probably had as large a series of specimens from different Papuan islands of this genus as anybody, recognizes three distinct species (besides the two of unknown habitat), which he says may always be recognized as distinct at any age or in either sex. He gives the following table of these species as understood by him (*l. c.* p. 756):—

1. Virides: lateribus rubro-puniceis. (Mares.)	
a. Majores.	
a'. Viridis, colore obscuriore, cauda minus cærulea	1. *polychlorus.*
b'. Viridis, colore lætiore, cauda magis cærulea	2. *cardinalis**.
b. Minores. Cauda vix cærulea	3. *grandis**.
2. Rubræ: fascia interscapulari et abdomine cyaneo vel violaceo. (Feminæ.)	
a. Annulo periophthalmico cyaneo	1. *polychlorus.*
b. Annulo periophthalmico nullo	
a'. Subcaudalibus auroreis vel rubro-flavis	2. *cardinalis.*
b'. Subcaudalibus pure flavis	3. *grandis.*

In this table the green *E. cardinalis* is, I suppose, the *intermedius* of most authors, whilst the red *E. polychlorus* is clearly what is usually called *E. linnæi*.

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* In the original paper Count Salvadori has accidentally transposed these two names, as I have ascertained from a corrected copy of his paper that he forwarded to Mr. Sclater.

On the whole it seems probable that we must be content with ascribing to *Eclectus* the most marked sexual differences in colour of any Parrots hitherto known. *Aprosmictus* (at least in some species, *e. g. A. scapulatus*) also presents very well-marked sexual differences in coloration, and, as Prof. Garrod has shown (P. Z. S. 1874, p. 494), agrees very closely with *Eclectus* in anatomical structure. *Eclectus*, however, differs from all known Parrots in having the female more gaudily coloured than the male. Can it be possible that, as in the few other analogous instances where the female is the more brightly coloured (e. g. *Turnix*, *Rhynchæa*, &c.*), the duties of incubation devolve on the male? If such be the case, we can easily understand the use of the green coloration being retained by the male. Unfortunately we are still totally ignorant of the habits, nidification, and immature plumage of these Parrots. Let us hope that Signor D'Albertis or Mr. Brown will soon throw some light on this, as well as on the other interesting points noted above, which still require further examination.

In conclusion, supposing that we assume the new views as to the sexual differences of the *Eclecti* to be correct, the following list of the species will show concisely their sexual differences and geographical distribution.

1. Eclectus polychlorus (Scop.).

Maximus: mas viridis colore obscuriore, lateribus rubro-puniceis, caudâ minus cæruleâ: femina rubra, fasciâ interscapulari, abdomine et annulo periophthalmico cyaneis.

Hab. in insulis Papuanis et Moluccanis Ternate, Gilolo, Batchian, Morotai, Guebè, Waigiou, Mysol, Gagè, Ké, Aru, Papua, Nova Hibernia, et Nova Britannia.

2. Eclectus grandis (Gm.).

Major: mas viridis, lateribus rubro-puniceis, caudâ vix cæruleâ: femina rubra, fasciâ interscap. et abdomine cyaneis, subcaudalibus purè flavis.

Hab. in insulis Ternate, Gilolo, Batchian, Morotai, et Gagè.

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* *Vide* Darwin's 'Descent of Man,' vol. ii. p. 200 *et seq.* (1871).

3. Eclectus cardinalis (Bodd.).

Minor: mas viridis, *E. polychloro* similis, at colore lætiore caudâque magis cæruleâ distinguendus: femina rubra, fasciâ interscapulari et abdomine cyaneis; subcaudalibus auroreis vel rubro-flavis.

Hab. in insulis Moluccanis Ceram, Bouru, et Amboyna.

4. Eclectus westermanni, Bp.

Minor: mas viridis, lateribus concoloribus. Femina adhuc ignota.

Hab. ——? (Viv. Nat. Art. Mag. et Zool. Soc. Lond.)

5. Eclectus corneliæ, Bp.

Mas ignotus: femina punicea, colore cyaneo neque dorsi neque lateris inferioris ullo.

Hab. ——? (Viv. Nat. Art. Mag. et Zool. Soc. Lond.)

XXIV.—*On a Collection of Birds made by Mr. E. C. Buxton in the District of Lampong, S.E. Sumatra.* By Arthur, Marquis of Tweeddale, M.B.O.U.

(Plates V. & VI.)

The first systematic account of the Avifauna of Sumatra was written by Sir Stamford Raffles* at Fort Marlborough, near Bencoolen, of which settlement Sir Stamford was Lieutenant-Governor. Bencoolen is situated on the western shore of the southern half of the island of Sumatra; and most of the birds enumerated were obtained in the vicinity of Bencoolen itself, or during short trips made into the interior of the district of that name during the years 1819 and 1820, partly by Sir Stamford assisted by Dr. Joseph Arnold, and partly by Messrs. Diard and Duvaucel. These two gentlemen (the first a pupil, the other the step-son of the great Cuvier) were French naturalists, whose services Sir Stamford had secured while on a visit to Bengal. The unfortunate misunderstanding that soon after their arrival in Sumatra occurred between the Lieutenant-Governor and these two Frenchmen led, in about twelve months, to a cessation of their labours and to their departure from Bencoolen; and Sir Stamford was obliged to undertake the description of the materials collected himself, or to allow the results to be published in France. Hence his papers in the 'Linnean Transactions'*. The number of species therein catalogued and more or less described is about 168. But some birds obtained in the Prince-of-Wales Island and Singapore are included; and a few species, such as *Psittacus ornatus* and *P. sumatranus*, appear to have been introduced into the list through oversight and on the strength of caged birds.

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* Tr. L. S. xiii. pp. 277, 330; Appendix, pp. 339, 340 (dated June 1, 1820; read March 20, 1821). The date of the volume is 1822.

In 1830 Lady Raffles published a memoir† of her late husband, to which was appended a catalogue, by Vigors, of the zoological specimens collected in Sumatra under the superintendence of Sir S. Raffles, and by Dr. Horsfield of those in Java. About 194 species from Sumatra are enumerated, that locality being stated in each instance; and some species additional to Sir Stamford's list are discriminated and described as new by Vigors. This catalogue would have been more useful had its author identified all the species on which Sir Stamford had previously bestowed new titles, and had the invalid titles been reduced to synonyms—a work, however, subsequently accomplished in the most thorough manner by Mr. F. Moore‡.

Since 1830 no attempt at a complete account of the birds of Sumatra has been published; but a good many species not contained in Vigors's list have been discovered and described, principally by the Dutch zoologists, more particularly by Temminck§ and by Salomon Müller‖. Mr. Wallace, during a stay of about three months, collected some birds in the district of Palembang, penetrating a hundred and twenty miles inland; but no separate account of his collection has appeared.

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* The collection of birds was sent to the E.I. C. Museum in London in 1820, and of drawings in 1821.

† Memoir of the Life and Public Services of Sir Stamford Raffles, by his Widow (1830); Cat. Zool. Specimens, *Aves*, pp. 648, 687.

‡ A Catalogue of the Birds in the Museum of the Hon. E.I. Company, in two vols.: vol. i. (1854), vol. ii. (1856–58).

§ Nouveau Recueil de Planches Coloriées d'Oiseaux, in five volumes. Date of completed work 1838.

‖ Tijdschrift voor Naturlijke Geschiedenis en Physiologie, ii. pp. 315, 354 (1835). Verhandelingen over de Natuurlijke Geschiedenis der Ne-

During a period of a little over five months, commencing the 30th of May, 1876, Mr. Edmund Charles Buxton travelled in the Lampong district, situated at the south-eastern extremity of Sumatra, and there made a large collection of birds, which he has kindly placed at my disposal, and of which I now propose to give an account. He started from Telok Betang and went inland to Sockedana, a distance of about 80 miles, and obtained in all 152 species, of which two appear to be undescribed. The general character of the birds in this part of Sumatra is Malaccan. Of Mr. Buxton's collection only twelve species are not inhabitants of the Malaccan peninsula as at present known; and of these eleven are Javan species, some of them recurring in Burma and one in India. They are *Dendrotypes analis, Batrachostomus cornutus, Xantholæma rosea, Dicæum flammeum, Rubigula dispar, Oriolus coronatus, Prinia familiaris, Buchanga leucophæa, Pericrocotus xanthogaster, Munia leucogastroides, Crypsirhina varians, Sturnopastor contra.* One, *Batrachostomus cornutus,* is known, out of Sumatra, to occur in Borneo only.

The proportion of species, seventy-nine, which have also a Javan habitat is large, as might be inferred would be the case from the narrowness of the straits which separate South-eastern Sumatra from the western extremity of Java. This number may eventually be shown to be still greater when the ornis of Java is better known.

Some notes were kept by Mr. Buxton; but, as they are chiefly descriptive of the plumage, I have only incorporated the few observations which relate to the soft parts or to habits. The chief value of the collection consists in its enabling us to establish positively, by critical com-

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derlandsche overzeesche bezittingen: Land- en Volkenkunde (1839–44); Zoologie (1839–44).

parison, the identity or non-identity of a large number of Sumatran species with those inhabiting Java, Borneo, and Malacca, and of enabling us to add a little to our knowledge of geographical distribution.

1. MICROHIERAX FRINGILLARIUS.

Falco fringillarius, Drapiez, Dict. Class. d'Hist. Nat. vi. p. 412, t. v., "des Indes" (1824).

A series of four individuals, identical with Malaccan examples. [" Sits on naked branches at top of trees."—*Buxton.*]

2. HALIASTUR INTERMEDIUS.

Falco pondicerianus, Gm.; Raffles, *t. c.* p. 278.

Haliastur intermedius, Gurney, Ibis, 1865, p. 28.

3. ASTUR TRIVIRGATUS.

Falco trivirgatus, Temm. Pl. Col. 203, "Sumatra" (1824).

4. PERNIS PTILORHYNCHUS.

Falco ptilorhynchus, Temm. Pl. Col. 44, "Java, Sumatra" (1823).

An example of a Honey-Buzzard was obtained by Mr. Buxton which has the feathers of the breast, abdomen, flanks, ventral region, and the thigh-coverts white or tawny white, transversely barred with two or three brown broad bands, the terminal band being narrowly fringed with tawny white or pure white. The feathers of the fore neck have darker brown drops, which occupy the terminal part of each plume, these drops being set between a rufo-fulvous and a white ground. The under wing-coverts are banded like the breast. The upper plumage is dark brown, the terminations of the feathers being darkest. The head and crest are black, the latter measuring about two and a quarter inches. The face is grey. The throat is white, with a central and two lateral dark brown streaks. Two broad dark brown bands traverse the middle rectrices, the latter being terminal. A third narrower band near the base of the tail is of a paler shade of brown. The intervening spaces are of a dirty yellowish white, much mottled with earthy brown.

The plumage of the under surface very closely resembles that of *P. celebensis* in its markings; but the colouring differs in being dark brown, and the chest is not tawny rufous.

5. NINOX SCUTULATA.

Strix scutulata, Raffles, *t. c.* p. 280, "Sumatra" (1821).

Mr. Buxton obtained two adult examples of this long-wished-for species at Tarahan, S.E. Sumatra. They are absolutely identical with Malaccan individuals in mus. nostr. ["Iris yellow; bill dark slate, nearly black."—*Buxton.*]

6. RHOPODYTES ERYTHROGNATHUS.

Cuculus melanognathus, Horsf. apud Raffles, *t. c.* p. 287, "Sumatra."

Phœnicophaus erythrognathus, Hartl. Verz. Mus. Brem. p. 95, "Sumatra" (1844).

Malaccan and Bornean examples do not differ from typical specimens.

7. RHOPODYTES DIARDI.

Melias diardi, Less. Tr. d'Orn. p. 132, "Java" (1831).

Malaccan individuals do not differ from Sumatran.

8. ZANCLOSTOMUS JAVANICUS.

Phœnicophaus javanicus, Horsf. *t. c.* p. 178, "Java" (1820); Zool. Res. Java, t. 5.

Typical specimens not separable from Sumatran and Malaccan.

9. RHINORTHA CHLOROPHÆA.

Cuculus chlorophæus, Raffles, *t. c.* p. 288, ♂, "Sumatra" (1821).

Phœnicophæus caniceps, Vigors, App. Mem. Raffles, p. 671, ♀, "Sumatra" (1830).

Malaccan and Bornean examples do not differ from Sumatran.

10. SURNICULUS LUGUBRIS.

Cuculus lugubris, Horsf. *t. c.* p. 175, "Java" (1820); Zool. Res. Java, t. 58.

Identical with typical specimens.

11. CHRYSOCOCCYX XANTHORHYNCHUS.

Cuculus xanthorhynchus, Horsf. *t. c.* p. 179, "Java" (1820); Zool. Res. Java, t. 59.

Undistinguishable from typical specimens.

12. HIEROCOCCYX FUGAX.

Cuculus fugax, Horsf. *t. c.* p. 178, "Java" (1820).

Sumatran, Bornean, and Malaccan examples offer no points of difference.

13. CENTROPUS EURYCERCUS.

Cuculus bubulus, Horsf. apud Raffles, *t. c.* p. 286, "Sumatra."

Centropus eurycercus, A. Hay; Blyth, J. A. S. B. 1845, p. 551, "Malacca."

Sumatran and Bornean individuals agree with typical specimens. As yet I have not been able to compare them with the Javan form, which is, according to Blyth (*l. c.*), a smaller species.

14. THRIPONAX JAVENSIS.

Picus javensis, Horsf. *t. c.* p. 172, "Java" (1820).

The examples obtained by Mr. Buxton in no respect differ from Malaccan, with which the type is said to agree.

15. TIGA RAFFLESI.

Picus rafflesii, Vigors, App. Mem. Raffles, p. 669, "Sumatra" (1830).

Bornean and Malaccan individuals are inseparable.

16. TIGA JAVANENSIS.

Picus javanensis, Ljungh, Act. Stockh. xviii. p. 134, "Java" (1797); Walden, Ibis, 1871, p. 164.

Picus tiga, Horsf. *t. c.* p. 177 "Java" (1820).

"*Tiga rufa,*" Raffles, *t. c.* p. 290, "Sumatra" (1821).

Sumatran, Malaccan, and Javan individuals do not specifically differ. Of somewhat smaller dimensions than the race which inhabits the Burmese countries.

17. CALLOLOPHUS MENTALIS.

Picus mentalis, Temm. Pl. Col. 384, "Java" (1826).

Sumatran and Malaccan examples do not vary.

18. CALLOLOPHUS PUNICEUS.

Picus puniceus, Horsf. *t. c.* p. 176, "Java" (1821); Raffles, *t. c.* 289, "Sumatra" (1821).

Malaccan, Bornean, and Sumatran individuals do not differ.

19. CALLOLOPHUS MALACCENSIS.

Picus malaccensis, Lath. Ind. Orn. i. p. 241, "Malacca" (1790).

Count Salvadori has remarked (*t. c.* p. 51) that this species and *C. miniatus* of Java are distinct, and that I had erred (Ibis, 1871, p. 165) when, following Malherbe and others, I regarded them as belonging to the same species. Dr. Sclater appears to be the first author who distinguished the Javan on account of its uniform red crest and back from the Bornean and Malaccan form (P. Z. S. 1863, p. 211); but I may observe that I have an example collected in East Java by Mr. Wallace, and marked a male, which has the more elongated crest-plumes red, mingled quite as much with yellow as is to be found in true *C. malaccensis*. The feathers also of the interscapular region exhibit green mixed with red, and are matched by an example from Malacca collected by Mr. Maingay. Mr. Buxton has two Sumatran examples in his collection: one has the dorsal feathers green, largely dashed, centred, and tinged with red; the other has these feathers dull olive-green washed with red.

20. MICROPTERNUS BADIUS.

Picus badius, Raffles, *t. c.* p. 289, "Sumatra" (1821).

I provisionally retain the above title for the Sumatran *Micropternus* in preference to that of *brachyurus*, Vieill. (N. Dict. xxvi. p. 103, 1818), because the type of Vieillot's species is said to have come from Java, and we cannot rely on Malherbe's statement that the two are specifically identical. Between Malaccan and typical examples I am unable to detect any good distinction. Many Malaccan specimens have the crown very pale; but this is also to be observed in one of Mr. Buxton's birds. The Bornean (south-east and north-east) species, *M. badiosus*, appears to differ in having the terminal portions of the rectrices uniform unbanded brown and a somewhat longer bill. Count Salvadori (*t. c.* p. 59) mentions as a distinctive character the eye of the male being completely surrounded by red points or dots. In a N.E. Bornean male collected by Mr. Everett, and in another by Mr. Lowe (mus. nostr.), this is the case; and I have not observed the same character in the multitude of Malaccan birds I have examined, nor is it to be found in Mr. Buxton's Sumatran males; but it is to be observed in examples from Malabar, and it may merely indicate the full breeding male plumage of all the members of the genus.

21. MEIGLYPTES TRISTIS.

Picus tristis, Horsf. *t. c.* p. 177, "Java" (1820); Raffles, *t. c.* p. 290, "Sumatra" (1821).

Not distinguishable from Bornean and Malaccan individuals. The length of wing is very variable in adults of this species; and in one of Mr. Buxton's specimens, an adult male, the bill is remarkably short.

22. MEIGLYPTES TUKKI.

Picus tukki, Lesson, Rev. Zool. 1839, p. 167, "Sumatra."

Malaccan examples (*Hemicercus brunneus*, Eyton, P. Z. S. 1839, p. 106) do not differ.

23. DENDROTYPES ANALIS.

Picus analis, Horsf. *t. c.* p. 177, "Java" (1820).

Bill longer, otherwise identical with typical examples. This Woodpecker also inhabits the island of Madura.

24. YUNGIPICUS FUSCO-ALBIDUS.

Picus variegatus, Latham, apud Wagler, Syst. Av. *Picus*, no. 27 (1827), nec Lath.

Yungipicus fusco-albidus, Salvadori, *t. c.* p. 42 (1874).

Picus sondaicus, Wallace, Gray, Hand-l. no. 8589, 1870; Salvadori, *t. c.* p. 43, note, "Java."

Mr. Buxton's Sumatran series of this small Woodpecker consists of examples undistinguishable from Malaccan and Javan individuals. Wagler described the species from Javan examples only (*conf.* Cab. Mus. Hein. iv. ii. p. 54, note); but he adopted for it Latham's (Gmelin's) title of *Picus variegatus*, bestowed on a South-American Woodpecker, and Count Salvadori has therefore superseded the title by a new one (*l. c.*). The title *P. sondaicus*, Wallace, is founded solely on the Javan bird, and must fall, no description having accompanied the title when first published. Whatever *Picus mo-*

luccensis, Gm. (ex Pl. Enl. 748. f. 2), may be, it cannot apply to *Y. fusco-albidus*; for the bird figured by D'Aubenton is without any mandibular stripes.

25. HEMICERCUS SORDIDUS.

Dendrocopus sordidus, Eyton, Ann. & Mag. N. Hist. xvi. p. 229, "Malacca" (1845).

Hemicercus brookeanus, Salvadori, Atti. R. Ac. Sc. Tor. iii. p. 525, "Borneo" (1868); Ucc. Born. p. 44.

Hemicercus concretus (Reinw.), apud Salvadori, ex Borneo, Ucc. Born. p. 47, nec Reinw.

Mr. Buxton's series consists of three males and two females. These last are undistinguishable from Javan (*P. concretus* ♀) and Malaccan examples in the plumage of the female. One male is adult, and is identical with adult males from Malacca—that is, with the crest on the crown of the head deep crimson, he postoccipital crest-plumes being dark greyish olive. A second example, that of a young male, has the whole of the crown and *all* the crest-plumes dingy reddish buff or yellowish red. The third is intermediate, the coronal plumes being almost all pure crimson, and the postoccipital plumes passing over from the reddish tawny colour to olive-grey. I possess Malaccan skins which match these three Sumatran males. In all the under surface is dark olive-grey. The coronal plumes in other Malaccan examples of young males are ruddy buff, while the elongated occipital crest-feathers are all flame-red, with a yellowish buff shaft-line and tip to each plume. In another Malaccan male the postoccipital plumes are dark greyish olive, while the coronal feathers are mixed bright crimson and pale ruddy buff.

The adult male of *H. concretus* (Reinw.), ex Java (Pl. Col. 90, f. 1), differs from *H. sordidus* by having the *entire* crest crimson, although not of so dark a shade as in *H. sordidus.* The occurrence of this species beyond Java rests on no good authority. It is figured by Malherbe (Picidæ, t. 41, f. 5) under the title of *Micropicus hartlaubi.* The curious fact that in *H. sordidus* ♂, when immature, the *whole* crest is buffy flame-coloured (anyhow the postoccipital crest)—

and that as the bird reaches maturity the flame-coloured postoccipital crest becomes olive-grey, not having been recognized, has led to some confusion.

26. SASIA ABNORMIS.

Picumnus abnormis, Temm. Pl. Col. 371. f. 3, "Java" (1825).

Malaccan and Bornean examples in no respect differ from the Sumatran individuals in Mr. Buxton's collection.

27. LORICULUS GALGULUS.

Psittacus galgulus, Linn. S. N. i. p. 150 (1766); Raffles, *t. c.* p. 281, "In the interior of Bencoolen."

28. PSITTINUS INCERTUS.

Psittacus incertus, Shaw, Nat. Misc.; O. Finsch, Papag. ii. p. 612.

Psittacus malaccensis, Lath., Raffles, *t. c.* p. 281.

The variation in plumage this species undergoes remains still, as when Dr. O. Finsch wrote, not fully explained. Unfortunately the sexes of the four individuals brought home by Mr. Buxton were not determined by dissection.

29. ANORRHINUS GALERITUS.

Buceros galeritus, Temm. Pl. Col. 520, "Sumatran" (1831).

["Naked skin surrounding eyes and throat white, with a blue tint. Very common in flights of about eight or ten."—*Buxton.*] Dr. Cantor describes the same parts of the Malaccan bird as being black (Horsf. & Moore, *t. c.* p. 594).

30. RHYTIDOCEROS UNDULATUS.

Le Calao à casque festonné, Le Vaill. Ois. Rares, i. p. 41, t. 20, 21, ♀, "Batavia" (1801).

Buceros undulatus, Shaw, Gen. Zool. viii. p. 26 (1811), ex Le Vaill. t. 20, 21; Vigors, App. Mem. Raffles, p. 666 (1830).

Le Calao javan, Le Vaill., *t. c.* p. 45, t. 22, ♂ juv. "Batavia."

Buceros javanicus, Shaw, *t. c.* p. 28 (1811), ex Le Vaill. t. 22.

Le Calao javan ou Calao annuaire, Le Vaill. Ois. d'Afr. t. 239, ♂ adult (1806).

Buceros niger, Vieillot, N. Dict. iv. p. 592 (1816), ex Le Vaill. t. 20, 21.

Buceros annulatus, Dumont, Dict. Sc. Nat. vi. p. 210 (1817), ex Le Vaill. t. 20, 21.

Buceros pusaran, Raffles, *t. c.* p. 293, ♂ juv., "Sumatra" (1821).

Buceros annulatus, Drapiez, Dict. Class. d'Hist. Nat. iii. p. 32 (1828), ex Levaill. t. 20, 21.

Buceros ruficollis, Vieill. apud Blyth, J. A. S. B. xii. p. 176 (1843), nec Vieill.

Buceros pucoran, Raffles, Blyth, J. A. S. B. 1843, p. 990.

Buceros plicatus, Lath. apud Sundev. Om Le Vaill. Ois. d'Afr. p. 50 (1857), nec Lath.

Calao plicatus (Lath.), Bp. Consp. i. p. 90 (1854), nec Lath.

Rhyticeros plicatus (Lath.), Horsf. & Moore, Cat. E.I. C. Mus. ii. p. 598 (1856–58), nec Lath.; Moore, P. Z. S. 1859, p. 451.

Rhytidoceros obscurus (Gm.), Salvad. Ucc. Born. p. 85, "Sarawak" (1874), nec Gm.

An adult, seemingly an aged male, is in Mr. Buxton's Lampong collection. That gentleman, in his notes, describes the naked gular skin as being yellow, "with a black bar and greenish tinge." This bar is evident on the dried skin. Dr. Cantor has described the gular pouch of the Malaccan male as being "rich gamboge-yellow, with two transverse black bars" (Horsf. & Moore, *l. c.**), that of the female as "dirty azure, with two transverse black bars," of the young male as "yellow, with the transverse black bars indistinct." In a Malaccan example of an adult male I find traces of only one black bar. Schlegel (Mus. P.-Bas. *Buceros*, p. 2) states that the Javan bird has an oblique blue bar across the throat of the male, but does not mention any bar on that of the female.

The title of this Hornbill has been by most ornithologists, commencing with Latham, confounded with that of the strictly and only Papuan member of this family, *Buceros ruficollis*, Vieill. The first notice of the Papuan species occurs in Bontius; and his account was transcribed by Ray in his English translation (1678) of Willughby's 'Ornithology.' By Ray it is called "Bontius his Indian Crow," and is said to come from the "Molucca Islands, especially Banda." An outline drawing of the bill is given (t. lxxviii.), which accurately resembles the bill of an adult example of the Papuan *B. ruficollis*. It may here be mentioned, parenthetically, that while it is not always easy to recognize a species, or to differentiate one from another nearly allied species, through the means of a complete drawing of a bird made at the early date of Ray's edition, still the art of outline-drawing was as perfect then as it is now, and that such delineations are quite reliable. The bold broad folds on the posterior part of the culmen of the bill which characterize the Papuan Hornbill, are plainly and accurately rendered in Ray's plate; and the total absence of lateral grooves and ridges on the basal walls of the two mandibles enables us to determine without doubt that the bill represented belonged to the Papuan, and not to its near ally, the Malayan species.

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* In his later account (*l. c.*) Mr. Moore omits all mention of the two transverse black bars.

On Ray's* outline drawing of the bill Latham founded his *Wreathed Hornbill* (Synop. i. p. 358, 1781). Gmelin gave to this species the title of *Buceros obscurus* (S. N. i. p. 362, 1788). In his first supplement to his 'Synopsis,' Latham (p. 70, 1787†) added a reference to a passage in Dampier's 'Voyage' (iii. pt. 2, p. 165‡, t. 3), and identified the bird, there described as having been killed in Ceram and on New Guinea, with his "Wreathed Hornbill." In the 'Index Ornithologicus' (i. p. 146, 1790), Latham gave his "Wreathed Hornbill" a Latin title, and called it *Buceros plicatus*. It seems therefore that the Gmelinian title of *obscurus* and Latham's title of *plicatus* apply to the Papuan

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* I have not been able to consult an original copy of Willughby's work. It may be that in it Willughby gives an account of the Hornbill described by Bontius.

† Can any learned bibliographer explain how Latham, in his first Supplement (1787), was able to quote from Gmelin's edition of the 'Systema,' published in 1788?

‡ The correct number of the page is 231, and Latham, as well as J. R. Forster before him, transcribed the misprint on Dampier's plate no. 3.

Hornbill, and not to the Malayan. In the 'General History' (ii. p. 323, 1822) Latham mixed up his original species with Le Vaillant's *Calao javan* (*l. c.*) and Shaw's species founded on Le Vaillant's plate (Ois. d'Afrique); but the plate (xxxiv.) given by Latham plainly refers to the Papuan species.

In D'Entrecasteaux's 'Voyage' (ix. p. 304, t. xi.), a Hornbill obtained in the Papuan island of Waigiou is figured, on which the title of *Buceros ruficollis*, Vieillot (N. Dict. iv. p. 600, 1816), was founded (Temm. Pl. Col. 557). But J. R. Forster had already (Zool. Indica, p. 40, 1781) bestowed the title of *B. plicatus* on Dampier's Ceram Hornbill. Vieillot's title, usually adopted for the Papuan species, therefore ought to fall; and that of *plicatus*, Forster, having priority, should supersede Gmelin's title of *obscurus*, and Latham's title *plicatus*, and stand for the Papuan Hornbill. Gmelin's title *obscurus* and its synonym *plicatus*, Lath., being thus restored to their original owner (i. e. *B. plicatus*, Forster), the oldest available title for the Malayan bird becomes *undulatus*, Shaw.

A form very closely allied to the Malayan *B. undulatus* occurs in Tonghoo, which Mr. Blyth separated (J. A. S. B. 1843, p. 177) under the title of *subruficollis*, the synonymy of the Papuan bird and of the Malayan being at that time exceedingly involved, and the species themselves not well known. Mr. Blyth subsequently twice identified his *B. subruficollis* with Malayan *B. plicatus* (*op. cit.* xii. p. 991, xvi. p. 998), but eventually returned to his original view, and retained *B. subruficollis* as distinct (Cat. Calc. Mus. p. 320, no. 191).

R. subruficollis is only to be distinguished from *R. undulatus* by wanting, in the two sexes, the lateral ridges on the base of both mandibles, and by the bill not being so deep and massive. It does not possess a black transverse bar on the naked gular skin of either sex*, but that part in the male is yellow, and in the female blue, as in *R. undulatus*. It is remarkable that two such closely allied forms should coexist in the same area; and yet there seems no doubt that both inhabit Tenasserim; and an example of a young male obtained at Tonghoo by Mr. W. Ramsay belongs to *B. undulatus,* while the remainder of a very large series from that district consist of nothing but *B. subruficollis.* There is little or no difference in the general dimensions, although Mr. Blyth considered that the body of *B. undulatus* was heavier than that of its ally.

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* Mr. Wardlaw Ramsay, who paid special attention to this Hornbill when in Burma, is quite positive on this point.

B. narcondami, Hume (Str. F. i. p. 411), as described, seems to be another closely allied form. No mention is made of lateral ridges on the mandibles.

31. CARCINEUTES PULCHELLUS.

Dacelo pulchella, Horsf. *t. c.* p. 175, "Java" (1820).

Carcineutes pulchellus (Horsf.); Sharpe, Mon. Alced. t. 96.

This bird is not separable from Malaccan and Peguan examples.

32. HALCYON PILEATA.

Alcedo pileata, Bodd. Tab. Pl. Enl. p. 41 (1783).

Alcedo atricapilla, Gm.; Raffles, *t. c.* p. 293, "Sumatra."

33. SAUROPATIS CHLORIS.

Alcedo chloris, Bodd. Tabl. Pl. Enl. p. 49 (1783).

Alcedo chlorocephala, Gm., Raffles, *t. c.* p. 293, "Sumatra."

34. PELARGOPSIS FRASERI, Sharpe, P. Z. S. 1870, p. 65, "Java, Sumatra, Malacca;" Mon. Alced. t. 33, "Sumatra."

Alcedo leucocephalus, Gm., Raffles, *t. c.* p. 293, "Sumatra."

The four examples obtained by Mr. Buxton most closely resemble the Bornean form referred by Mr. Sharpe in his monograph to *P. leucocephala,* the cap, however, being more pronounced. They differ from the great majority of Malaccan individuals with which I have made a comparison in wanting the very dark distinct brown cap of that peninsular form. But, in truth, this group of Kingfishers requires further study; for the variations in colouring of the cap, on which Mr. Sharpe partly relies (P. Z. S. 1870, p. 62), do not always seem to offer, as I once believed, stable characters when a large series of individuals from different, or even similar, localities are examined.

35. ALCEDO EURYZONA.

Alcedo cyanocephala, Shaw, Raffles, *t. c.* p. 293, "Sumatra," nec Shaw.

Alcedo euryzona, Temm. Pl. Col. livr. 83, "Java" (1830); Sharpe, Mon. Alced. t. 8; Schlegel, Vog. Neder. Ind. *Martins pêcheurs*, p. 45, t. 1. f. 1, 2.

A single example of this rare Kingfisher was obtained by Mr. Buxton. The extreme rarity of the species has prevented me comparing it with typical and Malaccan specimens.

36. ALCEDO MENINTING.

Alcedo meninting, Horsf. *t. c.* p. 172, "Java" (1820).

Alcedo asiatica, Sw. Zool. Ill. (1) t. 50 (1821).

Alcedo ispida, var. *bengalensis*, apud Raffles, *t. c.* p. 293, "Sumatra."

Examples of this well-marked species from Java, Borneo, and Malacca agree with those from the Lampong district.

37. ALCEDO BENGALENSIS.

Alcedo bengalensis, Gm. S. N. i. p. 450 (1788).

38. CEYX RUFIDORSA.

Alcedo tridactyla, Linn., Raffles, *t. c.* p. 293, "Sumatra."

Ceyx rufidorsa, Strickl. P. Z. S. 1846, p. 99, "Malacca;" Sharpe, Mon. Alced. t. 41.

Ceyx innominata, Salvadori, Atti R. Ac. Sc. Tor. iv. p. 465 (1869).

Identical with Malaccan and Bornean examples.

39. MEROPS SUMATRANUS, Raffles, *t. c.* p. 294, "Sumatra" (1821).

Merops bicolor, Bodd., Salvadori, Ucc. Borneo, 90, nec Bodd.; Sharpe, Ibis, 1876, p. 33, et 1877, p. 5; conf. Walden, Tr. Z. S. ix. p. 150, t. 26.

Sumatran, Malaccan, and Bornean examples do not differ. Are not examples with the chestnut plumage, washed with green, immature birds, of both sexes, in transition from the dark green of the young to the full dress of the adult, rather than representatives of the adult female form only, as stated by Mr. Sharpe (*l. c.*)?

40. NYCTIORNIS AMICTA.

Merops amicta, Temm. Pl. Col. 310, "Sumatra" (1824).

Bornean and Malaccan examples in no respect differ. Count Salvadori (*t. c.* p. 91) refers *N. malaccensis*, Cab., to the female, thus assuming that the female wants the crimson pectoral and pink frontal plumes. I rather incline to the belief that the adult birds of both sexes are alike, and that the uniform green birds belong to a younger stage of plumage. One of the examples obtained by Mr. Buxton is in plain green dress (*N. malaccensis*), but has one small frontal plume pink.

41. HARPACTES KASUMBA.

Trogon kasumba, Raffles, *t. c.* p. 282 (1821), *partim*; Gould, Mon. Trog. t. 10.

Malaccan and Bornean examples do not differ. I retain the title now usually adopted, although Sir S. Raffles confounded two species in his description.

42. HARPACTES DUVAUCELI.

Trogon duvaucelii, Temm. Pl. Col. 291 (1824), "Sumatra;" Gould, Mon. Trog. t. 12.

Trogon kasumba, Raffles, *l. c.*, *partim*.

Identical with examples from Malacca, where it occurs along with *H. rutilus* (conf. Walden, Ibis, 1871, p. 161). Sir S. Raffles described (*l. c.*) this species as being the young of *H. kasumba*.

43. BATRACHOSTOMUS CORNUTUS.

Podargus cornutus, Temm. Pl. Col. 159, "Bencoolen" (26 July, 1823).

The example obtained by Mr. Buxton is in full rufous plumage. It agrees with Bornean individuals.

44. LYNCORNIS TEMMINCKI.

Lyncornis temmincki, Gould, Icones Avium, t. 6, "Borneo" (1838).

Identical with Malaccan and typical examples.

45. MACROPTERYX COMATUS.

Cypselus comatus, Temm. Pl. Col. 268, "Sumatra" (1824).

Malaccan examples do not differ.

46. MACROPTERYX LONGIPENNIS.

Hirundo longipennis, Rafin. Bull. Sc. Soc. Philom. iii. an. ii. p. 158, "Java" (1804).

Hirundo klecho, Horsf. *t. c.* p. 143, "Java" (1820).

Identical with typical examples.

47. MEGALÆMA MYSTACOPHANES.

Bucco mystacophanos, Temm. Pl. Col. 315, "Sumatra" (1824); Marshall, Mon. Capit. t. 19; Salvadori, *t. c.* p. 34, t. 1.

Megalaima humei, Marshall, Ibis, 1870, p. 536, "Borneo;" Mon. Capit. t. 21.

Malaccan examples are identical. Among the large series collected by Mr. Buxton are examples in the transition plumage on which Mr. Marshall founded *M. humei.*

48. MEGALÆMA CHRYSOPOGON.

Bucco chrysopogon, Temm. Pl. Col. 285, "Sumatra" (1824); Marshall, Mon. Capit. t. 18.

Agrees with Malaccan specimens.

49. MEGALÆMA VERSICOLOR.

Bucco versicolor, Raffles, *t. c.* p. 284, "Sumatra" (1821); Marsh. Mon. Capit. t. 22.

Bornean and Malaccan individuals belong to the typical species.

50. XANTHOLÆMA ROSEA.

Bucco roseus, Dumont, Dict. Sc. Nat. iv. p. 52 (1806); Marshall, Mon. Capit. t. 43.

The two examples collected by Mr. Buxton are identical with Javan and Negros individuals. Hitherto not recorded from Sumatra.

51. XANTHOLÆMA HÆMACEPHALA.

Bucco hæmacephalus, L. S. Müller, Suppl. p. 88 (1776); Marshal, Mon. Capit. t. 42.

Bucco philippensis, Linn., Raffles, *t. c.* p. 283, "Sumatra."

52. XANTHOLÆMA DUVAUCELI.

Bucco duvaucelii, Less. Tr. d'Orn. 164, "Sumatra" (1831); Marshall, Mon. Capit. t. 33. f. 1, 2.

Bucco australis, Horsf., Raffles, *t. c.* p. 285, "Sumatra," nec Horsf.

Sumatran, Bornean, and N.E. Malaccan examples exhibit no difference.

53. Arachnothera longirostra.

Certhia longirostra, Lath. Ind. Orn. i. p. 299, "Bengal" (1790).

Arachnothera affinis, Blyth, J. A. S. B. 1846, p. 43, "Eastern coast, Bay of Bengal, from Arracan to Malacca, Mysore district.

Arachnothera pusilla, Blyth, Cat. Calc. Mus. App. p. 328. no. 1348 (1849).

Sumatran examples are identical, both in size and plumage, with Javan. The only difference I am able to detect between Javan individuals and those from Malabar, Assam, and countries south to Malacca, including British Burma, and also those from Borneo, is one of dimensions, these last being smaller and having shorter and perhaps slenderer bills. But I possess Javan examples, in perfect plumage, as small as any from the other localities named—that is, with a difference of three, and even nearly four, eighths in the length of the wing of the largest and smallest Javan species. These differences in size may be characteristic of sex; but a fully plumaged Bornean male (Busan), sex ascertained by Mr. Everett, has the short wing of my smallest Javan examples. A Tonghoo male, with bright orange pectoral tufts, has a shorter wing and bill than a Javan male in like breeding-plumage. There is not, therefore, sufficient ground for separating specifically any one or more races of this spider-hunter; and if there were, the Javan and Sumatran race would require the new title, and not the race named *affinis* (subsequently *pusilla*) by Blyth; for it supplied Latham with the type of his *C. longirostra.*

54. Arachnothera flavigastra.

Anthreptes flavigaster, Eyton, P. Z. S. 1839, p. 105, "Malacca."

Arachnothera eytonii, Salvadori, *t. c.* p. 182 (1874).

Identical with typical examples. Count Salvadori has bestowed a fresh title, on account of the hybrid construction of the name given by Eyton.

55. ARACHNOTHERA CHRYSOGENYS.

Nectarinia chrysogenys, Temm. Pl. Col. 388. f. 1, "Java" (1826).

Certhia longirostra, Lath., Raffles, *t. c.* p. 299, "Sumatra," nec Lath.

Sumatran, Bornean (N.E.), and Malaccan examples do not differ.

56. ARACHNOTHERA TEMMINCKI.

Arachnothera temmincki, Moore, Cat. E.I. C. Mus. ii. p. 728, "Malacca?" (1856–58).

One Lampong example, obtained by Mr. Buxton, is inseparable from Malaccan individuals.

57. ARACHNOPHILA SIMPLEX.

Nectarinia simplex, S. Müller, Verh. Nat. Gesch. Ned. Overz. Bez., Land- en Volkenk. p. 172, note, "Sumatra, Borneo" (1843); *op. cit.* Zool. Aves, p. 62, t. 8. f. 4 (1846); Walden, Ibis, 1870, p. 31.

Arachnophila simplex (S. Müller); Salvadori, *t. c.* p. 172.

A single example of this rare Sun-bird (♂) is in the collection. Reichenbach's generic title, *Arachnoraphis*, cannot be used, being partly founded on a Malaccan *Arachnothera* (*A. flavigastra*, Eyton) and partly on the New-Ireland *Nectarinia flavigastra*, Gould (=*A. frenata*). *A. simplex*, Müll. & Schlegel, ex Lombock, Gray's Hand-l. no. 1370, is a true *Arachnothera* from Lombock, discovered by Mr. Wallace, and has nothing to do with the species it is there referred to.

58. ÆTHOPYGA SIPARAJA.

Certhia siparaja, Raffles, *t. c.* p. 299, "Sumatra" (1821); Walden, Ibis, 1870, p. 33.

Æthopyga eupogon, Cab. Mus. Hein. i. p. 103, note, "Malacca, Borneo" (1850–51).

The examples from S.E. Sumatra are identical with Malaccan, Pinang, and Bornean specimens. Cabanis's title of *eupogon* must therefore fall.

59. ARACHNECHTHRA PECTORALIS.

Nectarinia pectoralis, Horsf. *t. c.* p. 167, "Java" (1820).

Undistinguishable from Javan examples.

60. ANTHREPTES MALACCENSIS.

Certhia malaccensis, Scopoli, Del. Fl. et Faun. Insubr. ii. p. 90 (1786).

Nectarinia javanica, Horsf., Raffles, *t. c.* p. 299, "Sumatra."

Apparently very numerous. Does not differ from typical examples.

61. NECTAROPHILA HASSELTI.

Nectarinia hasseltii, Temm. Pl. Col. 376. f. 3, "Java" (1825).

Certhia brasiliana auct.

Certhia sperata, Linn., Raffles, *t. c.* p. 298, "Sumatra," nec Linn.

Cinnyris ruber, Lesson, Tr. d'Orn. p. 296, "Sumatra, *fide* Pucheran" (1831).

Many examples, which do not differ from Malaccan and Bornean.

62. CHALCOSTETHA INSIGNIS.

Nectarinia insignis, Jardine, Nat. Lib. xxxvi. p. 274 (1842), ex Temm. Pl. Col. 138. f. 3, "Java."

Identical with Malaccan individuals, which Count Salvadori informs us (*t. c.* p. 178) are not to be distinguished from Bornean (Sarawak). Sal. Müller has identified Sumatran with Javan typical examples.

63. DICÆUM FLAMMEUM.

Motacilla flammea, Sparrm. Mus. Carls. fasc. iv. t. 98, "Java" (1789).

Identical with Javan examples.

64. DICÆUM OLIVACEUM.

Dicæum olivaceum, Walden, Ann. & M. N. H. (ser. 4) xv. p. 101, Tonghoo hills (1875).

A single skin of a *Dicæum* was obtained by Mr. Buxton which is identical with the type specimen of *D. olivaceum.*

65. Dicæum trigonostigma.

Certhia trigonostigma, Scopoli, Del. Fl. et Faun. Insubr. ii. p. 91 (1786), ex Sonnerat, "Malacca."

Dicæum croceoventre, Vigors, Mem. Raffles, p. 673, "Sumatra" (1830).

The Lampong individuals in no respect differ from Malaccan.

66. Prionochilus percussus.

Pardalotus percussus, Temm. Pl. Col. 394. f. 2, "Java" (1826).

Identical with Malaccan specimens. I have not been able to compare it with typical examples.

67. Chalcoparia phœnicotis.

Motacilla singalensis, Gm. S. N. i. p. 964 (1788).

Nectarinia phœnicotis, Temm. Pl. Col. 108. f. 1, 388. f. 2, "Java, Sumatra" (1824).

A single specimen in immature plumage belongs to this species. Now that the knowledge of the geographical range of most species of birds has become so much more defined and accurate, the time appears to have arrived when inappropriate and misleading geographical titles may be with safety suppressed. This bird is certainly not found in Ceylon; nor does it occur on the Asiatic continent to the westward of the Brahmaputra. I have therefore adopted Temminck's title, which is next in priority. It is true that Count Salvadori (Ucc. Born. p. 180) makes *Certhia rectirostris,* Shaw, apply to this species; but that title, founded on plate lxxv. of Vieillot's 'Oiseaux Dorés,' belongs to an African bird, *Cinnyris elegans,* Vieillot (N. Dict. d'Hist. Nat. xxxi. p. 506, 1819), which was also figured by Vieillot under the same title some years later (Galerie des Ois. i. p. 292, t. clxxviii.).

68. Zosterops lateralis.

Zosterops lateralis, Temm. Mus. Lugd.; Hartlaub, J. für O. 1865, p. 15, "Java and Sumatra."

Very near to continental *Z. palpebrosus,* but of a more saturated green above, and with a longitudinal streak of bright yellow on the abdomen; the tail dark brown. It is also the form found at Malacca.

69. PARUS ATRICEPS.

Parus atriceps, Horsf. *t. c.* p. 160, "Java" (1820).

Le Mésange grise à joue blanche, Le Vaillant, Ois. d'Afr. iii. p. 171, t. 139*. fig. superior, "Batavia."

Parus cinereus, Vieill. Tabl. Encyl. Méth. ii. p. 506 (1823), ex Le Vaillant.

Identical with typical examples.

70. ÆGITHINA SCAPULARIS.

Iora scapularis, Horsf. *t. c.* p. 152, "Java" (1820); Zool. Res. Java, t.

Turdus scapularis, Horsf., Raffles, *t. c.* p. 311, "Sumatra."

A young male, procured by Mr. Buxton, is not separable from Javan examples of the female, except that all the new rectrices are black. Javan and Sumatran females are identical.

71. ÆGITHINA VIRIDISSIMA. (Plate V. fig. 1 (♂), 2 (♀).)

Iora viridissima, Bp. Consp. i. p. 397, "Sumatra, Borneo" (1850).

Two full-plumaged males and one female were obtained by Mr. Buxton; and I am thus enabled to give a description of the female of this somewhat rare species. The upper plumage of the female is like that of the male, only not so dark green. In *Æ. scapularis* ♀, ex Java, and in *Æ. zeylonica* ♀ and *typhia* ♀, the dorsal plumage is yellow-green. The colouring of the rectrices in *Æ. viridissima* ♀ is likewise darker green than in *Æ. scapularis.* Underneath the plumage has a yellow tint, but not so bright and pure as in *Æ. scapularis* and its allies. From the plumage of the head being dark green, the yellow orbits contrast more conspicuously in *Æ. viridissima* ♀ than in the females of the other species. The edgings to all the quills are greenish yellow, and not pure yellow or whitish yellow.

Bornean and Malaccan examples do not differ from the Sumatran.

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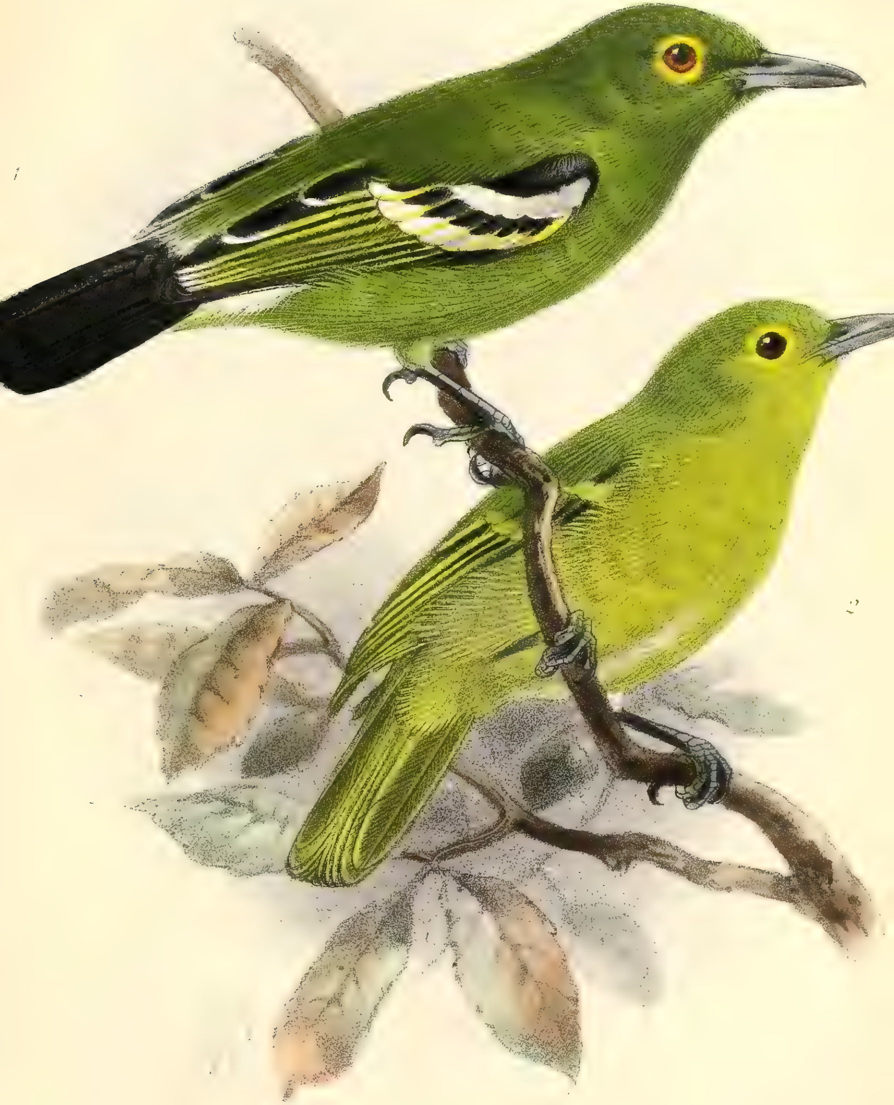
* Le Vaillant, in error, misnumbered the figures on this plate.

Ibis 1877 Pl. V



J. G. Keulemans lith.

M. & N. Hanhart imp.

ÆGITHINA VIRIDISSIMA 1 ♂, 2 ♀

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72. PHYLLORNIS VIRIDIS.

Turdus viridis, Horsf. *t. c.* p. 148, "Java" (1820), nec Gm.

Meliphaga javensis, Horsf. *t. c.* p. 152.

Turdus cochinchinensis, Gm., var., Raffles, *t. c.* p. 309, "Sumatra."

Chloropsis zosterops, Vigors, App. Mem. Raffles, p. 674, "Sumatra" (1830).

Malaccan and Bornean individuals do not differ from Sumatran. Although there is no doubt that *M. javensis,* Horsf., refers to this species, for the types were compared (*vide* Horsf. & Moore, Cat. Mus. E.I. C. i. p. 261), still I concur with Count Salvadori in rejecting the name; for it was published without any diagnosis, and the titles of two other very distinct species of *Phyllornis* were given as explanatory synonyms. The description of *T. viridis* has, moreover, precedence in the list, and is perhaps a better title than *javensis,* which tends to circumscribe the geographical range. Count Salvadori, however, passes over the title of *viridis* also, and adopts that of *sonneratii,* Jard. & Selby.

73. PHYLLORNIS ICTEROCEPHALA.

Turdus cochinchinensis, Gm., Raffles, *t. c.* p. 309, "Sumatra."

Phyllornis malabaricus, Gm., Temm. Pl. Col. 512. f. 2, "Sumatra" (1329).

Phyllornis icterocephalus, Lesson, Rev. Zool. 1840, p. 164, ex Temm.

Malaccan individuals offer no points of difference. But a Bornean male from Simanjou has the blue of the shoulders of a perceptibly darker shade, and belongs to *P. viridinucha,* Sharpe, a species the validity of which I am somewhat doubtful of.

74. PHYLLORNIS CYANOPOGON.

Phyllornis cyanopogon, Temm. Pl. Col. 512. f. 1, "Sumatra" (1829).

Specimens from Malacca are not separable. *P. mystacalis,* Sw. (2¼ Cent. p. 296), is either the female or young male of this species.

75. Ixus analis.

Turdus analis, Horsf. *t. c.* p. 147, "Java" (1820); Raffles, *t. c.* p. 310, "Sumatra."

Otocompsa personata, Hume, Str. F. 1873, p. 456, "Acheen."

Inseparable from typical specimens, and identical with Malaccan and Bornean examples.

76. Criniger phæocephalus.

Ixos phæocephalus, Hartl. Rev. Zool. 1844, p. 401, "Malacca;" Walden, Ibis, 1871, p. 169, t. vi. f. 2.

Sumatran and typical examples are identical.

77. Tricholestes criniger.

Brachypodius (?) *criniger*, A. Hay, Blyth, J. A. S. B. 1845, p. 577, "Malacca."

Tricophorus minutus, Hartlaub, J. für O. 1853, p. 156, "Malacca."

Tricholestes minutus (Hartlaub), Salvadori, *t. c.* p. 265, t. v. f. 1, "Sarawak" (1874).

Mr. Buxton procured one specimen, which in no way differs from Sarawak individuals. Why has Count Salvadori (*l. c.*) preferred Hartlaub's title, *minutus*, for the Malaccan bird to mine of *criniger*, published seven years previously?

78. Alcurus ochrocephalus.

Turdus ochrocephalus, Gm. S. N. i. p. 821 (1788); Walden, Ibis, 1872, p. 379.

79. Rubigula dispar.

Turdus dispar, Horsf. *t. c.* p. 150, "Java" (1820); Raffles, *t. c.* p. 310, "Sumatra;" Temm. Pl. Col. 137.

80. Brachypus euptilosus.

Brachypus euptilosus, Jard. & Selby, Ill. Orn. t. iii., "Singapore" (1825?).

Malaccan examples do not differ.

81. Brachypus plumosus.

Pycnonotus plumosus, Blyth, J. A. S. B. 1845, p. 567, ♂, "Singapore."

Pycnonotus brunneus, Blyth, *t. c.* p. 568, ♀, "Malacca."

Brachypus modestus, A. Hay; Blyth, *t. c.* p. 568, ♀, "Malacca."

The single example in Mr. Buxton's collection is passing from the brown plumage of the immature *B. brunneus* to the greener plumage of the adult. Count Salvadori (*t. c.* p. 199) states that the brown birds are females and young males, while the adult males are distinguished by the green colouring of the wings and tail. In a large series of the species, with sexes ascertained by dissection, and collected at Malacca by Mr. W. Ramsay, I find females fully as green in plumage as males. An example collected by Mr. Maingay at Malacca, with green wings and tail, is marked by that collector as being a female; and he was a most competent authority. A large series from Java consists of examples undistinguishable from Malaccan. Labuan individuals also belong to the same species.

Pycnonotus pusillus, Salvadori (*t. c.* p. 200) seems to be the bird described by Moore under the title of *Microtarsus olivaceus* (Cat. E.I. C. Mus. i. p. 249), ex Malacca, where it is not uncommon. I have compared Bornean examples and can detect no difference.

82. BRACHYPODIUS MELANOCEPHALUS.

Lanius melanocephalus, Gm. S. N. i. p. 309. no. 51 (1788).

Turdus melanocephalus, Raffles, *t. c.* p. 310, "Sumatra" (1820).

Brachypodius immaculatus, Sharpe, Ibis, 1876, p. 39, "Sibu, Borneo."

Identical with Malaccan and Bornean individuals; all the rectrices with a dark transverse band. *B. immaculatus*, Sharpe, cannot be separated.

83. IOLE OLIVACEA.

Iole olivacea, Blyth, J. A. S. B. 1844, p. 386, "Malacca."

A single Sumatran example of a bird was obtained by Mr. Buxton, which agrees well with the Malaccan form I refer to *Iole olivacea*, Blyth.

84. Oriolus xanthonotus.

Oriolus xanthonotus, Horsf. *t. c.* p. 152, "Java" (1820); Zool. Res. Java, t. 46.

Javan, Sumatran, Malaccan, and Bornean examples exhibit no specific differences.

85. Oriolus coronatus.

Oriolus chinensis, Linn., Raffles, *t. c.* p. 303, "Sumatra," nec Linn.

Oriolus coronatus, Sw. 2¼ Cent. p. 342, "Java" (1837).

Mr. Buxton obtained a large series, which are identical with typical examples.

86. Cyanoderma erythropterum.

Timalia erythroptera, Blyth, J. A. S. B. 1842, p. 794, "Singapore."

Timalia pyrrhophæa, Hartl. Rev. Zool. 1844, p. 402, "Sumatra."

On comparing examples obtained at the foot of Mount Ophir, Malacca, by Mr. W. Ramsay, who carefully, by dissection, ascertained the sexes, I can find no difference of plumage whereby the male can be distinguished from the female.

87. Macronus ptilosus.

Macronus ptilosus, Jard. & Selby, Ill. Orn. t. 150 (1835).

Timalia trichorros, Temm. Pl. Col. 594. f. 1, "Borneo, Sumatra" (1836).

Malaccan, Bornean, and Sumatran examples belong to one species.

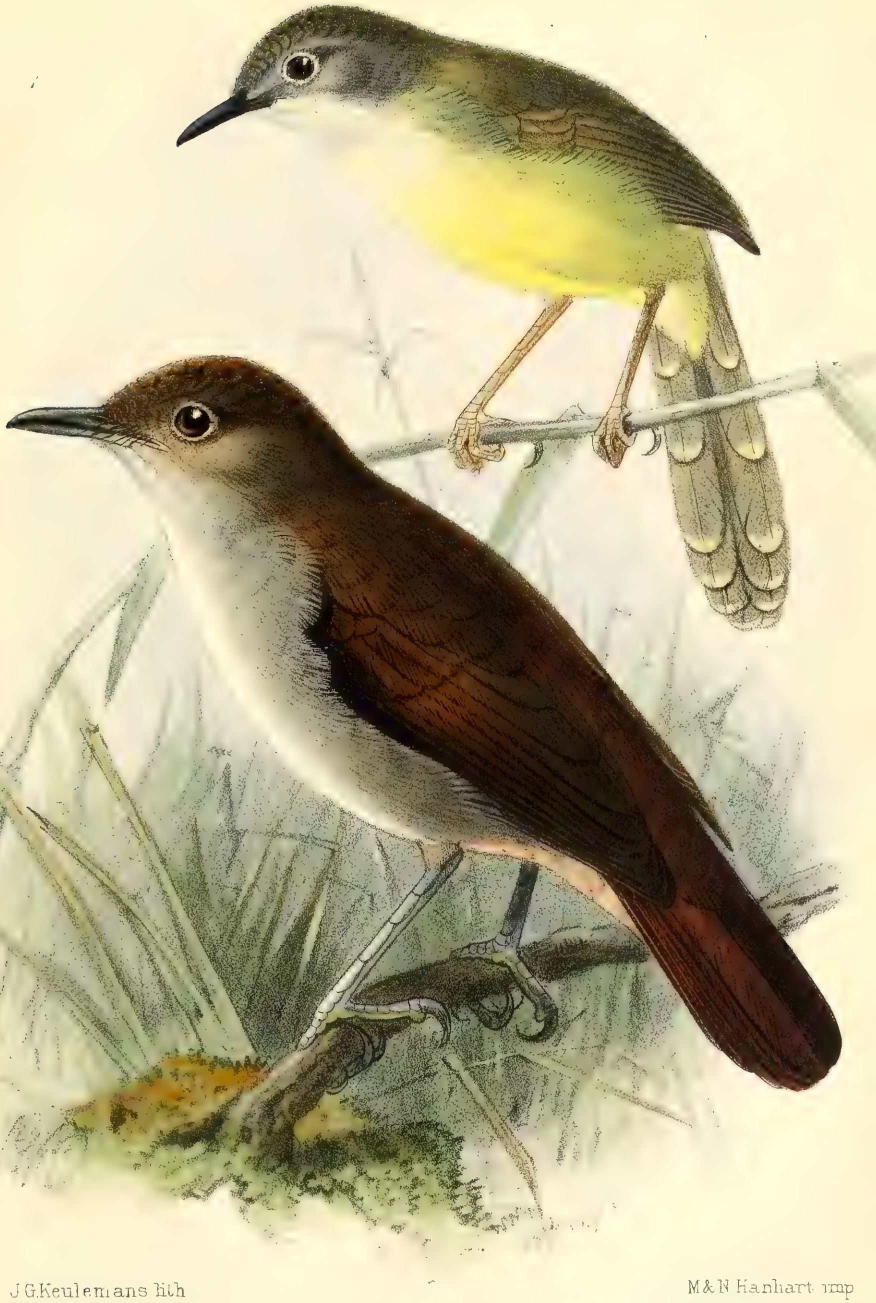
88. Brachypteryx buxtoni. (Plate VI. fig. 2.)

Brachypteryx buxtoni, Tweeddale, P. Z. S. 1877 (April 17th).

89. Drymocataphus nigricapitatus.

Brachypteryx nigrocapitata, Eyton, P. Z. S. 1839, p. 103, "Malacca."

The Sumatran bird in no way differs from the type species.



J.G.Keulemans lith.

M&N Hanhart imp

1. PRINIA RAFFLESI.
2. BRACHYPTERYX BUXTONI.

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90. MALACOPTERON MAJUS.

Malacopteron majus, Blyth, J. A. S. B. 1847, p. 461, "Malacca;" Salvadori, Ucc. Born. p. 225.

Napothera pileata, Müll., Bp. Consp. i. p. 359, "Sumatra, Borneo" (1850).

Sumatran and Malaccan examples are identical; and I may add that examples of the nearly allied *M. magnum*, Eyt., from Sumatra and Malacca, in my collection in no way differ.

91. PITTA BOSCHII.

Pitta boschii, Müll. & Schl. Verhandl. Nat. Gesch. Ned. Ind. *Aves*, pp. 5, 16, t. 1, "Sumatra" (1839–44).

There are no specific differences between Malaccan and typical examples.

92. CITTOCINCLA MACROURA.

Turdus macrourus, Gm. S. N. i. p. 820 (1788).

The Sumatran examples do not differ from Malaccan, Javan, Burman, Indian, Ceylonese, and Hainan individuals.

93. COPSYCHUS MUSICUS.

Lanius musicus, Raffles, *t. c.* p. 307, "Sumatra" (1821); Walden, Ibis, 1872, p. 102.

Copsychus problematicus, Sharpe, Ibis, 1876, p. 36, "Borneo."

Some years ago (*l. c.*) I endeavoured to show that the Malayan and Javan *Copsychus*, belonging to the *C.-saularis* section, differed from *C. saularis* in having the under wing-coverts "white centred with black;" and I suggested that, as the Sumatran species would in all probability be found to agree with them, they would fall under the title of *musicus*, given by Sir S. Raffles to the Sumatran Dayal. Comparing the specimens obtained by Mr. Buxton, I find that this surmise was correct. They also possess only six pairs of white rectrices, as against eight in true *C. saularis*—a character which is almost constant in Malaccan birds also.

The Javan race has a very short bill, but is otherwise identical with Sumatran *C. musicus*. Swainson long ago (2¼ Cent. p. 292) distinguished it under the title of *brevirostris**. Mr.

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* Erroneously identified with *C. amœnus* in Horsfield & Moore's Catalogue.

Sharpe (*l. c.*) has recently bestowed a new title, *problematicus*, on the Bornean form, giving as its distinctive character the black-centred under wing-coverts.

94. HENICURUS FRONTALIS.

Enicurus frontalis, Blyth, J. A. S. B. 1847, p. 156, "Malacca;" Elwes, Ibis, 1872, p. 259, t. ix.

Hitherto only recorded as inhabiting Malacca. Closely allied to *H. leschenaulti*, but of smaller dimensions. In one of Mr. Buxton's examples the white tips of the fourth pair of outer rectrices overlap the black portion of the third outer pair. In another individual the fourth pair is much shorter, and the white bars on the tail appear as represented in Mr. Elwes's plate. Both birds are otherwise alike and in full plumage, the frontal plumes being much developed and fully equalling, if not exceeding, the frontal crest of Javan *H. leschenaulti*.

In all Ningpo examples of fully plumaged specimens of *H. leschenaulti* (*E. chinensis*) I have examined, the outer pair of tail-feathers are about an inch shorter than the second pair, whereas in typical (Javan) *H. leschenaulti*, the outer pair equals the next pair; and this holds good in individuals from the Dafla hills and Tenasserim. The Javan bird is also considerably smaller than the Chinese species.

95. CALOBATES MELANOPE.

Motacilla melanope, Pallas, It. iii. p. 696 (1776).

Motacilla bistrigata, Raffles, *t. c.* p. 312, "Sumatra" (1821).

96. BUDYTES VIRIDIS.

Motacilla viridis, Gm. S. N. i. p. 962 (1788).

97. CORYDALLA MALAYENSIS.

Anthus malayensis, Eyton, P. Z. S. p. 104, "Malacca."

(?) *Anthus hasseltii*, Temm.; Schlegel, Handleiding Dierk. i. p. 263, "Java" (1857).

Alauda pratensis, Linn., apud Raffles, *t. c.* p. 315, "Sumatra," nec Linn.

One Sumatran example is in the collection, and does not differ from the common Malaccan *C. malayensis*. Count Salvadori has suggested that *C. hasselti* = *C. malayensis*; but the former is more nearly allied to *C. lugubris*, if the Bornean specimen marked *C. hasselti* in the British Museum is correctly determined.

Corydalla lugubris, Walden, differs from *C. malayensis* in having white superciliary patches before the eye, in the breast-markings consisting of a few sparse narrow brown lines, and not broad brown centres to the feathers, and in the ground-colour of the breast being albescent, and not pale rufous. Above, the colouring and markings of the two species are very similar.

98. Prinia familiaris.

Prinia familiaris, Horsf. *t. c.* p. 165, "Java" (1820); Zool. Res. Java, t. 52.

Motacilla olivacea, Raffles, *t. c.* p. 313, "Sumatra" (1821).

Mr. Buxton's Sumatran examples are identical with typical specimens. One of the Sumatran birds possesses white lores. The species also occurs in the island of Madura.

99. Prinia rafflesi, sp. nov. (Plate VI. fig. 1.)

Mr. Buxton's collection contains two examples of a species of *Prinia* I am unable to identify. It may be the same as *M. olivacea*, Raffles (*l. c.*); but that bird has been determined by Horsfield and Moore (Mus. E.I. C. i. p. 320) to be *P. familiaris*.

Above olive-green, front of head ashy. Lores, which extend partly over the eye, white. Chin, throat, cheeks, and upper breast white. Lower breast, abdomen, flanks, ventral region, and under tail-coverts pure canary-yellow. Thigh-coverts yellow, tinged with ferruginous. Carpal edge and under carpal coverts yellow-white. Quills brown, with olive-green edgings. Rectrices pale brown, washed with green, and with an obscure darker brown subterminal spot and pale tips. Bill black and slender as compared with that of *P. familiaris*. Bill from forehead 0·72, wing 1·18, tarsus 0·75, tail 2·50.

Differs from *P. familiaris* in wanting the conspicuous white tips to the minor and major wing-coverts, in being darker olive-green above, in the olive-green fringings of the quills and colouring of the rectrices, in wanting a distinct brown cap, and in the brown subterminal tail-bands being indistinct and obscure, and the pale apical bands being narrower and ill defined. It is more nearly allied to *P. flaviventris*, but differs in having a longer stouter bill, by being of a much darker, less yellow, green above, and by the possession of subterminal brown spots on the rectrices, a character which is seemingly never present in *P. flaviventris*. I have compared it with twenty examples of *P. flaviventris* from localities ranging from Rangoon to Bootan, and with nine specimens of *P. familiaris*.

100. ORTHOTOMUS CINERACEUS.

Orthotomus cineraceus, Blyth, J. A. S. B. xiv. p. 589, " Malacca" (1845).

Orthotomus sepium, Horsf., var. ex Sumatra, Temm. Recueil d'Ois. livr. 101.

Orthotomus borneoënsis, Salvadori, *t. c.* p. 247, " Sarawak" (1874); Sharpe, Ibis, 1876, p. 41, t. ii. f. 1; idem. *op. cit.* 1877, p. 116.

Sumatran individuals do not differ from typical and Bornean examples. True *O. sepium* extends to the island of Madura. *O. edela* is the Javan form of *O. sutorius*, but wants the white lores and superciliary stripe of the continental species.

101. GRAUCALUS SUMATRENSIS.

Ceblepyris novæ-guineæ, S. Müll. Verhand. Land- en Volkenk. p. 190, nec Lath.

Ceblepyris sumatrensis, S. Mull. *t. c.* p. 191, " Sumatra" (1829–44).

Graucalus concretus, Hartl. J. f. O. 1864, p. 445, " Borneo."

Identical with Malaccan and Bornean examples. None of the birds obtained by Mr. Buxton, old males included, possess a black lorum and ocular stripe.

102. VOLVOCIVORA CULMINATA.

Ceblepyris culminatus, A. Hay, Madr. J. L. & Sc. xiii. p. 157, " Malacca" (1844).

Volvocivora schierbrandi, v. Pelzeln, " Novara," p. 80, t. 2. f. 1 (1865).

Volvocivora borneoënsis, Salvad. Atti R. Ac. Sc. Tor. iii. p. 532 (1868).

Bornean, Sumatran, and typical examples in plumbeous-coloured plumage do not differ.

103. LALAGE DOMINICA.

Turdus dominicus, L. S. Müller, Suppl. p. 145 (1776).

Turdus terat, Bodd. Tabl. Pl. Enl. p. 17 (1783).

Lanius striga (Horsf.), Raffles, *t. c.* p. 305 "Sumatra" (1821).

104. HEMIPUS OBSCURUS.

Muscicapa obscura, Horsf. *t. c.* xiii. p. 146, "Java" (1820); Zool. Res. Java, t. 39. f. 2.

Lanius no. 12, Raffles, *t. c.* p. 308, "Sumatra."

Malaccan, Sumatran, and typical examples are alike.

105. ARTAMUS LEUCORHYNCHUS.

Lanius leucorhynchus, Linn. Mantissa Plant. p. 524, "Manilla" (1771); Raffles, *t. c.* p. 306, "Sumatra."

Does not differ from typical examples.

106. DISSEMURUS PLATURUS.

Le Drongo à raquette, Le Vaillant, Ois. d'Afr. iv. p. 73, t. 175 (1805).

Dicrurus platurus, Vieillot, N. Dict. d'Hist. Nat. ix. p. 558 (1817), ex Le Vaill.

Lanius malabaricus, Lath., Raffles, *t. c.* p. 306, "Sumatra," nec Lath.

Edolius retifer, Temm. Rec. d'Ois. livr. 30, sub *Edolius remifer,* "Malacca, Java, Sumatra" (1823), partim, ex Le Vaill.

(?) *Edolius intermedius,* Less. Tr. p. 380, "des Moluques," (1831).

Edolius rangoonensis, Gould, P. Z. S. 1836, p. 5, "Rangoon;" J. & S. Illustr. Orn. t. xxxviii. (1840), ex Gould.

Edolius malayensis, Blyth, Jerd. B. Ind. i. p. 438 (1862).

Four examples of the genus *Dissemurus* contained in Mr. Buxton's collection cannot be separated from the crestless Malaccan species. But the difficult question arises, What is the correct title of the Malaccan Racket-tailed

Drongo? Sumatra, Borneo, and Malacca are the only three areas, so far as is now known, which are inhabited by full-plumaged birds devoid of a frontal crest; but Sonnerat figured and described a species of *Dissemurus* without a crest from the Malabar coast (Voy. Indes, ii. p. 195, t. 111). On this Scopoli founded the title of *Muscicapa malabarica* (Del. Fl. Faun. Insubr. ii. p. 96, 1786), and later on Latham the title of *Lanius malabaricus* (Ind. Orn. i. p. 66, 1790). It has consequently been contended by some authors that Sonnerat described from and figured a Malaccan bird, and that therefore the title of *malabaricus* does not belong to the Malabar bird; by others (*e. g.* Temminck, *l. c.*), that the Malabar bird belonged to the same species as the Javan and Sumatran; and as the title of *malabaricus* was inappropriate, Temminck altered the name to *retifer* (lege *setifer*), a title restricted by recent authors to the Javan crested bird. Sonnerat's figure, from whatever species it may have been taken, is, without doubt, most inaccurate; and Le Vaillant (*l. c.*) severely criticised it; but Sonnerat distinctly leaves it to be understood that his type was from the Malabar coast; and Buffon (Hist. Nat. iv.) alludes to Sonnerat having sent him the bird from the coast of Malabar, Sonnerat (*l. c.*) stating that the bird he describes and figures is the one he sent to Buffon. The crest in adult Malabar birds is not largely developed; and it is quite possible that Sonnerat figured a young bird, or else that he overlooked the short impending nasal plumes. Le Vaillant (*l. c.*) was the next author who wrote on a species of Racket-tail Drongo; and he gave a description and plate of a crestless species of *Dissemurus*. The origin of his type it is now impossible to discover; for he merely tells us that it came from the collection of a Mons. Dorcy. The description and plate most accurately represent the Malaccan and Sumatran form; and as Vieillot founded his title of *platurus* (*l. c.*) on Le Vaillant's description and plate, I adopt it for that species. It could not well have been taken from a Javan; for that race is crested, and great care is exhibited in the drawing.

The only other crestless form inhabits Borneo, and was separated by Temminck under the title of *brachyphorus* (Bp.

Consp. i. p. 351). Count Salvadori (*t. c.* p. 154) somewhat doubts the propriety of separating the Bornean from the Malaccan *Dissemurus*; but the much smaller spatulate termination of the outer pair of rectrices seems to be a constant character in the adults of the Bornean species; and I have examined a very large series, both at Leiden and in my own collection, from Labuan, Sarawak, and Banjarmassing. Rangoon adult birds have a crest, and belong to true *D. paradiseus*.

107. CHAPTIA MALAYENSIS.

Chaptia malayensis, A. Hay, J. A. S. B. 1846, p. 294, "Malacca;" Walden, J. A. S. B. 1875, extra number, pt. ii. p. 128.

Edolius picinus, S. Müller, Bp. Consp. i. p. 352, "Sumatra" (1854).

Malaccan and Sumatran individuals do not differ.

108. BUCHANGA LEUCOPHÆA.

Dicrurus leucophæus, Vieillot, N. Dict. d'Hist. Nat. ix. p. 587 (1817).

Edolius cineraceus, Horsf. *t. c.* p. 145, "Java" (1820).

Javan and Sumatran examples are identical.

109. PERICROCOTUS ARDENS.

Turdus flammeus (Gm.), Raffles, *t. c.* p. 310, "Sumatra."

Phœnicornis ardens, "Boie," Mus. Lugd.; Bp. Consp. i. p. 357, "Sumatra" (1850); Salvad. *t. c.* p. 143, t. ii. f. 1, 2.

Pericrocotus flammifer, Hume, Str. F. iii. p. 321, note, "Mergui" (1875).

Bornean and Malaccan examples agree with typical. Horsfield and Moore (Cat. E.I. C. Mus. ii. p. 142) refer *T. flammeus,* apud Raffles, and *P. ardens* to *P. xanthogaster*.

110. PERICROCOTUS PEREGRINUS.

Parus peregrinus, L. S. N. i. p. 342 (1766).

One specimen, seemingly belonging to this species, was obtained by Mr. Buxton; but as it is in immature plumage it is difficult to determine with certainty.

111. PERICROCOTUS XANTHOGASTER.

Lanius xanthogaster, Raffles, *t. c.* p. 309, "Sumatra" (1821).

The small section of the *Pericrocotidæ* of which *P. flam-*

meus may be considered the type, is represented both in Sumatra and Java by a race which it may perhaps be proper to separate as a distinct species. Of this form two representatives are contained in Mr. Buxton's collection. It is a smaller bird than *P. flammeus,* and it differs in the orange edgings of the outer webs of some of the secondaries uniting with the orange-coloured mark lower down, as is to be found in *P. brevirostris.* The female of this form appears to have supplied the type of *Lanius xanthogaster,* Raffles.

112. PHILENTOMA PYRRHOPTERUM.

Muscicapa pyrrhoptera, Temm. Pl. Col. t. 596, "Sumatra, Borneo" (1836).

Examples from Borneo and Malacca perfectly agree with the one obtained in the Lampong district by Mr. Buxton.

113. HYPOTHYMIS AZUREA.

Muscicapa azurea, Bodd. Tabl. Pl. Enl. p. 41 (1783).

Muscicapa cærulea, Gm., Raffles, *t. c.* p. 312, "Sumatra."

114. MUSCIPETA AFFINIS.

Tchitrea affinis, A. Hay, J. A. S. B. 1846, p. 292, "Malacca."

Sumatran specimens similar to typical.

115. CYORNIS ELEGANS.

Muscicapa elegans, Temm. Pl. Col. 596, f. 1, "Sumatra" (1836).

The species obtained by Mr. Everett at Marup, in North Borneo, and provisionally identified by me with *C. elegans* (Ibis, 1872, p. 373), is not to be specifically distinguished from the typical example in Mr. Buxton's collection.

116. LEUCOCERCA JAVANICA.

Muscicapa javanica, Sparrm. Mus. Carls. fasc. iii. t. 75, "Java" (1789); Raffles, *t. c.* p. 312, "Sumatra."

Agrees with typical and Malaccan specimens.

117. HIRUNDO JAVANICA.

Hirundo javanica, Sparrm. Mus. Carls. fasc. iv. t. 100, "Java" (1789).

Neilgherry examples (*H. domicola,* Jerd.) cannot be separated.

118. CYMBORHYNCHUS MACRORHYNCHUS.

Todus macrorhynchus, Gm. S. N. i. p. 446 (1788).

Eurylaimus lemniscatus, Raffles, *t. c.* p. 296, "Sumatra" (1821).

Cymborhynchus malaccensis, Salvadori, Atti R. Ac. Sc. Tor. ix. p. 425, "Malacca" (1874).

Six examples are in Mr. Buxton's collection, and they all possess the three outer pair of rectrices more or less marked with white on their inner webs. Therefore, according to Count Salvadori's view, the Sumatran bird should fall under *C. malaccensis,* Salvad. But if the Sumatran and Malaccan birds are really specifically distinct from the Bornean, and if the Bornean is the true Great-billed Tody of Latham, a title already exists in *lemniscatus,* Raffles; and that of *malaccensis,* Salvadori, is, in any case, unnecessary.

119. CALYPTOMENA VIRIDIS.

Calyptomena viridis, Raffles, *t. c.* p. 295, "Singapore, Sumatra" (1821).

Raffles affirms that the sexes do not differ; but this statement has not been supported by recent research (conf. Salvadori, *t. c.* p. 107). The species inhabits the Malay peninsula and Borneo, specimens from these regions not differing from Sumatran.

120. EURYLÆMUS OCHROMELAS.

Eurylaimus ochromalus, Raffles, *t. c.* p. 297, "Sumatra and Singapore" (1821).

Bornean, Pinang, and Malaccan individuals are not to be distinguished from Sumatran.

121. CORYDON SUMATRANUS.

Coracias sumatranus, Raffles, *t. c.* p. 303, "Sumatra" (1821).

Birds from Karen hills, Tenasserim, Malacca, and Borneo exhibit no departure from the typical examples obtained by Mr. Buxton.

122. PADDA ORYZIVORA.

Loxia oryzivora, Linn. S. N. i. p. 302 (1766).

123. MUNIA MAJA.

Loxia maja, Linn. S. N. i. p. 301 (1766).

Count Salvadori (*t. c.* p. 265) has controverted a suggestion of mine that this bird is replaced in Java by *M. ferruginea* (Sparrm.)=*M. majanoides,* Temm., on the ground that an undoubted example was obtained in Java by the "Magenta" Expedition. This evidence, however, appears hardly sufficient; for hundreds of Munias of almost every species may be bought at the different ports in the east, far away from their origin.

124. MUNIA LEUCOGASTROIDES.

Munia leucogastroides, Moore, Cat. E.I. C. Mus. ii. p. 510. no. 777, "Java" (1856–58); Walden, Ibis, 1874, p. 145.

The Sumatran examples do not differ from Javan.

125. PLOCEUS MACULATUS.

Loxia maculata, L. S. Müller, Suppl. p. 150. no. 56 (1776).

Loxia philippina, Linn. S. N. i. p. 305 (1766); Walden, Tr. Z. S. ix. p. 209.

Ploceus baya, Blyth, J. A. S. B. xiii. p. 945.

Mr. Buxton's collection only contains examples of females or non-breeding males of the Malayan race of *P. baya,* Blyth. As there seems to be little doubt that the species does not occur in the Philippines, I have adopted the next published title.

126. PLATYSMURUS LEUCOPTERUS.

Glaucopis leucopterus, Temm. Pl. Col. 265, "Sumatra" (1824).

Malaccan examples are identical.

127. CRYPSIRHINA VARIANS.

Corvus varians, Lath. Ind. Orn., Suppl. p. 26, "Java" (1801).

Examples from Burma, Java, and Sumatra are of one species.

128. CALORNIS CHALYBÆA.

Turdus chalybæus, Horsf. *t. c.* p. 148, "Java" (1820).

Lanius insidiator, Raffles, *t. c.* p. 307, "Sumatra" (1821).

Javan, Malaccan, and Bornean individuals are not specifically separable from those obtained in South-east Sumatra.

129. STURNOPASTOR CONTRA.

Sturnus contra, Linn. S. N. i. p. 290 (1766).

Pastor jalla, Horsf. *t. c.* p. 155, "Java" (1820).

Javan and these Sumatran examples are not separable from the Indian and Burman forms.

130. GRACULA JAVANENSIS.

Corvus javanensis, Osbeck, Voy. China & E. Ind. i. p. 157, "Java" (Eng. Tr. 1771).

Gracula religiosa, Linn.; Raffles, *t. c.* p. 303, "Sumatra."

The Sumatran examples from Lampong district are identical with others from East Java.

131. CORVUS VALIDUS.

Corvus validus, Temm., Bp. Consp. i. p. 385 (1854).

Malaccan and Sumatran birds do not differ.

We must accept Prof. Schlegel's assurance (Bijdr. t. d. Dierk. pp. 8 and 13, and Mus. Pays-Bas, *Coraces,* p. 29) that Prince Bonaparte did not describe the Gilolo (Halmahera) bird under the title of *C. validus,* but the Bornean and Sumatran and Timor (?) species. Still the Prince's words (*l. c.*), "*rostro capite multo longiore, valido, curvato,*" read as if he were describing the Gilolo species, subsequently entitled *C. validissimus* by Schlegel. Little is known of the *C. validus,* as the learned Professor tells us (*l. c.*); and consequently its range has not been well defined. The Sumatran bird is identical with one of the Malaccan Crows; and Professor Schlegel identified Bornean examples with the Sumatran. He further gives the island of Timor as its habitat, and asserts that *C. timoriensis,* Bp., is but a synonym. But, by the context, the Prince appears to have bestowed this title on *C. macrorhynchus,* Temm. apud Wagler, which is the only species of *Corvus* enumerated by Mr. Wallace in his list of Timor birds. Professor Schlegel, it is true, includes Timor within the range of *C. validus* only on the strength of a single example (♀) brought from there by S. Müller, which may well have been but an imperfectly grown example of *C. macrorhynchus.* The *C. validus,* var., of Wallace, ex Sula Islands (P. Z. S. 1862, p. 343), is certainly only a race of *C. enca,* a species apparently confined to Java, Celebes, and the Sula Islands; and *C. annectens*, Brüggemann, ex Celebes (Abhandl. naturwissenschaft. Ver. Bremen, p. 64. no. 89), is not of the same type as *C. enca*. *C. corax*, apud Raffles (*l. c.*), has been referred by Wagler, Schlegel, and others to *C. macrorhynchus*; but there is no evidence whatever that that species inhabits Sumatra, and it is much more probable that Sir Stamford alluded to *C. validus*. Blyth (Ibis, 1870, p. 171) made the extraordinary identification of *C. macrorhynchus*, Temm., with *C. culminatus*, Sykes. In the Javan bird the bill is full three inches in length, and the basal portion of the body-plumage is pure white. Mr. Blyth has also stated that *C. culminatus* extends to Malacca (Cat. Calc. Mus. p. 89. no. 448; Ibis, 1863, p. 368), and that there also occurs *C. macrorhynchus*, Vieillot*. This last species Mr. Blyth identified with *C. tenuirostris*, Moore, ex Bombay, but which Mr. Blyth (*l. c.*) asserts was founded on a Malaccan skin. Two Malaccan examples (mus. nostr.) belong to *C. tenuirostris*; and I am not prepared off-hand to identify them with *C. validus*. Their chief character is the form of the bill. In *C. validus* the bill gradually and regularly diminishes from the base to the apex, and is much bulged throughout the course of the commissure. The culmen is rather acute than broad and rounded, and the height of the bill is considerable †. In *C. tenuirostris* the bill is longer, very much compressed, and flattened on the sides; the culmen is broad and rounded, and not acute. The height is also less, 0·70 as against 0·91. The length of the gonys is greater. In colouring, the lower plumage is of a more ashy tint; and the general dimensions are less. The base of the feathers is white, as in *C. validus*. The British Museum possesses examples of *C. tenuirostris* from both Borneo (Banjarmassing and Labuan) and Sumatra.

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* What is *C. macrorhynchus*, Vieillot? I cannot find that Vieillot ever bestowed such a title, although Jerdon, Blyth, and Bonaparte have all used it. Mr. Blyth is clearly referring to *C. validus*; for later (Ibis, 1870, p. 171) he identified *C. tenuirostris* with *C. validus*.

† The contour of the bill of *C. validus* is very much that of *C. levaillanti* (*C. culminatus*); but the culmen is not quite so much arched.

Corvus validus.

	Wing.	Tail.	Bill from nostril.	Gonys.	Tarsus.
Lampong	12·80	8·75	1·75	1·00	2·37
,,	12·75	8·62	1·62	0·87	2·30
Malacca	12·75	8·50	1·62	1·00	2·25

Corvus tenuirostris.

	Wing.	Tail.	Bill from nostril.	Gonys.	Tarsus.
Malacca	12·50	7·00	1·75	1·18	2·00
,,	12·25	7·00	2·12	1·25	2·00

132. Treron nipalensis.

Columba curvirostra, Gm., Raffles, *t. c.* p. 318, "Sumatra."

Toria nipalensis, Hodgs. As. Res. xix. p. 164, "Nipaul" (1836).

Treron nasica, Schlegel, Nederl. Tijdschr. Dierk. i. p. 67, "Borneo" (1863).

Assam, Sumatran, and Malaccan examples are identical.

133. Butreron capellei.

Columba capellei, Temm. Pl. Col. 143. "Java" (1823).

Vinago gigantea, Vigors, App. Mem. Raffles, p. 674, "Sumatra (1830).

Malaccan individuals do not differ. Raffles does not appear to have ever published the title of *Columba gigantea* attributed to him by Mr. G. R. Gray (*Columbæ,* B. Mus. p. 13).

134. Osmoteron vernans.

Columba vernans, Linn. Mantissa, p. 526, "Philippines" (1771); Raffles, *t. c.* p. 318, "Sumatra;" Walden, Tr. Z. S. ix. p. 210.

Treron griseicapilla, Schlegel, Nederl. Tijdschr. Dierk. i. p. 70, "Sumatra, Bangka" (1863).

Notwithstanding Professor Schlegel's remarks (*l. c.*), I am unable to detect any specific difference between Sumatran and typical examples.

135. Osmotreron olax.

Columba olax, Pl. Col. 241. "Sumatra" (1823).

Sumatra supplied the type of this species; and Malaccan examples in no way differ.

136. SPILOPELIA TIGRINA.

Columba tigrina, Temm. Knip, Pig. t. 43 (1811).

The S.E. Sumatran examples do not differ from Javan, Malaccan, Bornean, and Celebean individuals. Temminck has left us in doubt as to the origin of the bird figured by Madame Knip.

137. GEOPELIA STRIATA.

Columba striata, Linn. S. N. i. p. 282 (1766).

Columba bantamensis, Sparrm., Raffles, *t. c.* p. 319, "Sumatra."

138. CHALCOPHAPS INDICA.

Columba indica, Linn. S. N. i. p. 284 (1766).

Columba javanica, Gm., Raffles, *t. c.* p. 317, "Sumatra."

139. ARGUSIANUS ARGUS.

Phasianus argus, Linn. S. N. i. p. 272 (1766); Raffles, *t. c.* p. 320, "Sumatra."

Sumatran and Malaccan birds do not differ.

140. ROLLULUS ROULOUL.

Phasianus rouloul, Scopoli, Del. Fl. Faun. Insubr. ii. p. 93, "Malacca" (1786).

Tetrao viridis, Gm., Raffles, *t. c.* p. 322, "Sumatra."

Identical with Bornean and typical examples.

141. CHARADRIUS FULVUS.

Charadrius fulvus, Gm. S. N. i. p. 687 (1788).

Charadrius pluvialis, var., Raffles, *t. c.* p. 328, "Sumatra."

142. ÆGIALITES GEOFFROYI.

Charadrius geoffroyi, Wagler, Syst. Av. *Charadrius*, no. 19 (1827); Harting, Ibis, 1870, p. 378, t. xi.

143. GLAREOLA ORIENTALIS.

Glareola orientalis, Leach, Tr. L. S. xiii. p. 132, t. 13. f. 1, 2, "Java" (1820).

144. TRINGOIDES HYPOLEUCUS.

Tringa hypoleucos, Linn. S. N. i. p. 250 (1766).

145. TOTANUS GLAREOLA.

Tringa glareola, Linn. S. N. i. p. 250 (1766).

146. ERYTHRA PHŒNICURA.

Rallus phœnicurus, Forster, Zool. Ind. p. 19, t. 9, "Ceylon" (1781).

(?) *Rallus sumatranus*, Raffles, *t. c.* p. 328, "Sumatra" (1821).

147. BUTORIDES JAVANICA.

Ardea javanica, Horsf. *t. c.* p. 190, "Java" (1820); Raffles, *t. c.* p. 326, "Sumatra."

148. ARDEA PURPUREA.

Ardea purpurea, Linn. S. N. i. p. 236 (1766).

149. DEMIEGRETTA SACRA.

Ardea sacra, Gm. S. N. i. p. 640 (1788).

150. STERNA MEDIA.

Sterna media, Horsf. *l. c.* p. 198, "Java" (1820); Saunders, P. Z. S. 1876, p. 655.

151. STERNA BERGII.

Sterna bergii, Lichtenst. Verzeich. p. 80, "South Africa" (1823); Saunders, *t. c.* p. 657.

I am indebted to Mr. Saunders for the identification of these two Terns.

XXV.—*Report on the Additions to the Collection of Birds in the British Museum in* 1875*.

WITH the exception of the year 1874, in which Mr. Wallace's collection was purchased by the Trustees, the last year shows a greater increase in this branch of the department than any of the preceding years, the total number of acquisitions amounting to 4277 specimens, among which were 152 species new to the collection and 47 typical specimens. The following may be specially mentioned:—

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* Extracted from a Return to an Order of the Honourable The House of Commons, dated 6 April 1877;—for an Account "of the Income and Expenditure of the British Museum (Special Trust Funds), for the Financial Year ended the 31st day of March 1877; and a Return of the Number of Persons admitted to visit the Museum in each Year from 1871 to 1876, both years inclusive; together with a Statement of the Progress made in the Arrangement of the Collections; and an Account of Objects added to them in the year 1876."

The collection of Corvidæ made by John Gould, Esq., and consisting of 100 specimens, amongst them the types of seven species described by that ornithologist.

A series of Cormorants from the Cornish coast; presented Dr. Günther.

Two hundred and ninety-nine specimens, obtained by the North-American Boundary Commission in the vicinity of the 49th parallel.

A series of 110 skins, nests, eggs, and skeletons, selected from the collection made by Messrs. Slater and Gulliver, Naturalists of the "Transit-of-Venus" Expedition, in Rodriguez.

The fourth portion of the collection of African Birds formed by, and formerly in the possession of, R. B. Sharpe, Esq.; it consists of 750 specimens, and contains 12 types, and 56 species previously not represented in the British Museum.

A collection from the Transvaal; presented by J. H. Gurney, Esq., and including specimens of *Turdus gurneyi*.

Seven specimens from the Victoria Falls, amongst them the types of a new genus (*Pinarornis*) and *Saxicola shelleyi*; purchased.

The type of *Bradyornis woodwardi*, from Natal; presented by J. D. S. Woodward, Esq.

The type of *Dromæocercus brunneus*, from Madagascar; presented by Algernon Peckover, Esq.

A selected series of 136 skins and eggs, from the collection made by the Rev. A. E. Eaton, Naturalist to the "Transit-of-Venus" Expedition, in Kerguelen Land.

A most valuable collection of 1303 specimens from Northern Bengal, North-western India, Burma, and Malacca; presented by Captain Stackhouse Pinwill.

Ten specimens from Burma, new to the collection; presented by the Marquis of Tweeddale, F.R.S.

A series of 200 specimens selected from the collections made by Dr. J. Anderson during the expedition to Yunnan.

Typical specimens of *Garrulax galbanus* and *Suthora munipurensis*; presented by Major H. H. Godwin-Austen.

The type of *Horeites pallidipes* from Sikkim; presented by L. Mandelli, Esq.

Two collections of 246 specimens from N.W. Borneo; one made by H. Low, Esq., the other by Mr. A. Everett.

A series of 77 specimens collected by Dr. Steere in the Philippine Islands, by which 20 species were added to the British-Museum collection.

Six species new to the collection, and represented by 12 specimens from Taviuni, Fiji Islands; collected by E. L. Layard, Esq.

The type of *Casuarius westermanni*, and specimens of *C. picticollis* and *C. beccarii*; purchased of the Zoological Society.

A series of the lately described new species of Bird of Paradise (*Paradisea raggiana*); purchased.

A small collection from South-eastern New Guinea; purchased.

Specimens of *Paradigalla carunculata* from the Arfak Mountains, and of *Tanysiptera carolinæ* from Mafoor; obtained by exchange.

Thirteen specimens from the Galapagos Islands; collected by Commander W. E. Cookson.

XXVI.—*Notes on a 'Catalogue of the* Accipitres *in the British Museum,' by* R. Bowdler Sharpe (1874). By J. H. Gurney.

[Continued from p. 236.]

The next Eagle which I propose to consider is that figured in plate 29 of the late Dr. Gray's 'Illustrations of Indian Zoology' under the name of "*Aquila fulvescens*." The type of this species is, I believe, not now in existence; and Mr. Sharpe quotes "*fulvescens*" as a synonym of "*vindhiana*;" but, as already mentioned (*anteà*, p. 225), I cannot agree with him in this view.

In 'The Ibis' for 1871, at p. 245, the late Dr. Jerdon stated that he considered it "not improbable" that the figure of *Aquila fulvescens,* above referred to, represented the same North-west Indian Eagle which had then been recently (but, as was subsequently shown, erroneously) identified with *A. rapax.* Such I believe to be the fact; and I now agree with the view which was enunciated in 1873 by Mr. W. E. Brooks*, that this Eagle, which Dr. Jerdon correctly identified with Dr. Gray's *Aquila fulvescens,* is specifically distinct both from *A. rapax* and from *A. vindhiana,* and that *A. fulvescens* must be recognized as a good and valid species.

Of two specimens, one adult and the other immature, which Mr. Brooks sent to England in 1869, I saw, if my memory serves me correctly, the adult only; this specimen, which Mr. Brooks informs me is the only one in adult plumage which has been obtained since the rediscovery of the species, was sent back to India, where it now remains in the possession of Mr. Hume. I have therefore had no opportunity of reexamining it; but, through the obliging intervention of Mr. Brooks, I have recently had the loan of an immature male and female belonging to Mr. John Hancock; and I found them so very different from the immature stage of any other Eagle with which I am acquainted, that I could not hesitate to acknowledge them as quite distinct both from *A. rapax* and from *A. vindhiana.* Coupling this fact with that of the agreement of these specimens with the bird figured by Gray under the name of *Aquila fulvescens,* I cannot doubt that this name is rightly applicable to the present species, and is not, as has been supposed, a synonym of *A. vindhiana.*

Previously to the identification of this species with *A. fulvescens,* some interesting descriptive notes respecting it were contributed by Mr. Brooks to 'The Ibis' for 1868, p. 351, and for 1870, p. 290, and by Mr. Anderson to the P.Z.S. for 1871, p. 687. These notes may, I think, be appropriately supplemented by the following description of the adult specimen already referred to, for which I am indebted to the kindness of Mr. Brooks:—

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* *Vide* Proc. Asiatic Society of Bengal for November 1873, p. 173, and Ibis, 1874, p. 84.

"Female adult, shot near Cawnpore, 3rd February, 1869. The top of the head is a light reddish brown, of a foxy tinge, extending to the upper part of the back, but with the extreme tips of most of the feathers of a darker tone, and not so red as the body of the feather, giving the appearance of a small clouded spot or drop at the tip of the feather; the back and all the wing-coverts are dull brown, rather inclined to rufous, but with the edges of all the feathers a few shades paler; some of the new feathers on the upper part of the back have moderately dark-brown centres edged with rather bright reddish brown; from the carpal joint along the ridge of the wing to its junction with the body, the feathers are of a light rufous similar to the head, but centred with darker brown; the primaries are dark blackish brown and free from all bars, whether looked at from above or below; the secondaries are not so dark a brown, and are slightly glossed with purple; the tertials a still paler brown, and decidedly glossed with purple; the middle and lower part of the back exhibit a mixture of light tawny and pale brown, the tawny prevailing at the sides near the flanks, and the brown towards the centre of the back. The upper tail-coverts are brown at the centre and tawny at the sides, the middle coverts being brown, and the lateral ones tawny, the colours passing rather abruptly into each other; the lowest row of the upper tail-coverts, however, is white. The tail is brown, becoming much paler towards the tip; the basal portion of the shafts is pure white; on the inner webs of some of the feathers there are faint indications of bars, which are square to the shaft of the feather; these bars are only observable when the tail is closely examined, and do not appear on the central feathers. There is a narrow black supercilium; the sides of the head are dull rufous brown, the chin and throat the same, passing into light reddish or foxy brown over the rest of the lower surface with the exception of the terminal portion of the lower tail-coverts, which are more whitish with a mixture of pale tawny; the tarsus is not quite so dark and bright a rufous, but more inclined to light sandy reddish brown; the upper portion of the wing-lining is very rufous, especially at the bend and ridge; lower down, towards the bases of the primaries, it changes into dusky brown; most of the feathers of the breast and upper abdomen are cloudily tipped with dull brown; and on the lower abdomen the centre of most of the feathers is clouded with brown throughout the entire length of the feather: these brown marks are seen when the bird is closely examined; otherwise the general tone of the lower surface at a little distance is tolerably bright rufous, and of a somewhat darker tone than that of the head. The iris was clear light brown; bill pale bluish grey with dark tip, cere and gape cream-colour, the former having a faint tinge of green; feet yellowish. Total length 27·5 inches, wing 21, tail 11·25, tarsus 4·25, from the end of the tibia to the end of the tarsus 9·75; the nostril a broad oval, placed obliquely as in the larger Spotted Eagle."

Mr. Brooks adds:—"In most of the immature birds procured in the buff plumage, the nostril is quite circular; I have, however, a buff bird almost changed to the adult tawny-red, which has the nostrils shaped as in the adult female above described. In this changing specimen a good many pale buff feathers remain, showing the connexion between the buff and the rufous stage, and many of the half-opened feathers show the darker plumage to be the new one. *Aquila fulvescens* is not a robust Eagle like *A. nævioides*, but is long-legged like *A. hastata*; it is a marsh-frequenting and migratory Eagle, coming to the plains of India only in the cold season; it is very rare, and its summer quarters are unknown."

I am also informed by Mr. Brooks that the male bird of the immature pair of *A. fulvescens* now in the possession of Mr. Hancock, and to which I have already referred, was shot by him in February 1868, and was then supposed to be a specimen of the larger Spotted Eagle in an undescribed state of plumage. Mr. Brooks also informs me that this is the specimen which was described at p. 168 of Mr. Hume's 'Scrap-book' as "*Aquila nævia*, no. 1," and the measurements of which are there given in detail on the preceding page. This description must therefore be taken as applying to the immature plumage of *A. fulvescens*, and the measurements as those of the male of that species. These measurements (*e. g.* wing 19·25 inches, tarsus 4·06) are decidedly smaller than those of the female above described by Mr. Brooks, and show a considerable difference in size between the sexes of this Eagle.

The immature stage of *Aquila fulvescens* has, if I mistake not, been twice figured in the 'Journal für Ornithologie'—first in the volume for 1853, on plate 4, under the name of "*Aquila nævia*, var. *pallida*," and subsequently in the volume for 1874, on plate 3, under that of "*Aquila boeckii*;" the first-named of these representations, however, seems to me to approach more nearly than the second to the tone of colouring that prevails in the two immature specimens of *A. fulvescens* which I have examined. If I am correct in these identifications, it will follow that the western range of *A. fulvescens* sometimes extends to Europe, as the original of "*Aquila nævia*, var. *pallida*," was captured near Pillau, on the coast of Eastern Prussia, during very stormy weather in November 1851; and of the two specimens described under the name of *Aquila boeckii* one is said, on the authority of the late Jules Verreaux, to have been obtained in Russia, the locality of the other being unknown.

Respecting the three Eagles to which I have next to refer, so much has of late years been written that I shall have the less reason to dwell upon them at any great length. Their ordinary appellation of "Spotted Eagles" is very applicable to the immature plumage of all three; but with regard to their specific names considerable confusion has arisen. Mr. Sharpe applies to the larger and most widely spread species Pallas's name "*clanga*;" and of the two smaller races, he designates the Eastern as "*hastata*" of Lesson, and the Western as "*maculata*" of Gmelin, this last being the only name of the three which appears to me to be open to objection.

Mr. Sharpe abandons the specific name of "*nævia*," which by many ornithologists has been applied indiscriminately to both the Spotted Eagles found in Europe, and by others to the lesser species only, and, in so doing, follows the course suggested by Mr. Dresser in the 'Annals and

Magazine of Natural History' for 1874, p. 373, and there supported by reasons which appear to me to be quite satisfactory. I am not, however, so well satisfied with the view advocated by Mr. Dresser in the paper above referred to, and adopted by Mr. Sharpe, that the lesser Spotted Eagle of Europe should bear the specific name of "*maculata*." An able article on these three Eagles from the pen of Mr. Brooks will be found in vol. iv. p. 268 of 'Stray Feathers,' in which cause is shown for believing that the term "*maculata*" may have been intended to apply to the larger species; and I believe that Mr. Dresser now agrees with me that sufficient uncertainty exists on this point to render it incumbent on ornithologists to drop the term "*maculata*" in the same way that Mr. Sharpe has already very properly dropped that of "*nævia*."

I am indebted to the kind assistance of Mr. Dresser for enabling me to analyze the remaining synonyms quoted by Mr. Sharpe as referring to the lesser Spotted Eagle of Europe, and have arrived at the following result:—"*melanaëtus*" of Savigny, and also "*bifasciata*" and "*fusca*" of Brehm, appear to appertain without doubt to the larger Spotted Eagle; "*nævia*, var. *pallida*," of Lichtenstein, I believe, as I have already mentioned, to be *A. fulvescens*; "*subnævia*" and "*fulviventris*" of Brehm are so imperfectly described that it is impossible to decide with any certainty to what species these two names were intended to apply. There remains but one other synonym to be accounted for, viz. "*pomarina*" of Brehm. This, I think, was probably founded on the European lesser Spotted Eagle; but if so, the description is inaccurate in one important particular, the nostril being described as "ear-shaped;" and this discrepancy must, I think, forbid the use of "*pomarina*" as a specific name for the lesser Spotted Eagle of Europe. Under these circumstances, I am of opinion that this species ought to bear the specific appellation of "*rufonuchalis*" proposed for it by Mr. Brooks in the paper above referred to; and I think that Mr. Brooks has done good service in providing a name that is liable to no doubt for this well-known species, which, by the laches of previous authors, had practically lapsed into an anonymous position.

Mr. Brooks's paper is also valuable as containing a clear statement of the differences which exist between the *A. rufonuchalis* and *A. hastata.*

Mr. Sharpe treats *A. clanga* and *A. hastata* as both being subspecies of *A. rufonuchalis* (his *A. maculata*); but as *A. clanga* has by far the widest geographical distribution of the three, I think it would be better to consider that Eagle as the leading species of the trio, and to allow *A. rufonuchalis* and *A. hastata* to occupy the position of subspecies.

The confusion which has so long existed between *A. clanga* and *A. rufonuchalis* renders it difficult to decide with certainty to which of these two species many of the existing records of Spotted Eagles in reality apply; and consequently it is by no means easy to define the respective geographical areas over which the two species range; but, independently of such ambiguous records, I believe that some definite and reliable information on this head may be added to that supplied in Mr. Sharpe's volume, and I will refer in the first instance to the geographical distribution of *A. clanga,* which is even more extended than the wide range recorded by Mr. Sharpe.

With regard to the eastern range of this species, the third volume of the 'Nouvelles Archives du Muséum d'Histoire Naturelle de Paris' contains, at p. 29, a list of birds observed in Mongolia and Northern China by the Abbé Armand David, in which the following notes occur, of which perhaps both, but, I think, certainly the last, relate to this species:—

"No. 5." An Eagle not named in the text, but identified in a footnote as "*Aquila planga,* Pallas."

"No. 7. *Aquila nævia,* Br., de passage."

In 'Stray Feathers,' vol. iii. p. 25, "*Aquila clanga,* Pall.," is included in a list of the birds of Upper Pegu on the authority of a communication made to the editor by Captain Feilden.

There is also in the Norwich Museum an immature example of this species, which was formerly in the museum of the Zoological Society of London, where it was recorded as having been obtained in Sumatra by the late Sir Stamford Raffles.

With reference to the western range of *Aquila clanga*, I may mention that I recently had an opportunity of examining the two immature Spotted Eagles killed in Cornwall, and recorded in the 'Zoologist' for 1861, pp. 7311 and 7817, and found them both to be examples of this species.

It seems certain that the larger Spotted Eagle has occurred both in France and in Spain; and I am indebted to the kindness of Mr. Howard Saunders for permission to quote the following remarks, from a letter with which he has favoured me, on this subject:—

"I was very much hurried during my visit to the Bayonne Museum; still I think I may state pretty positively that the two Spotted Eagles there, as also the one in the Bordeaux Museum, killed in the environs (all three young birds), are of the larger form, much larger than the small Pomeranian bird. . . . . Speaking from memory, I should say that the spotted specimen in the Valencian (Eastern Spain) Museum is a very large female. As regards the Seville and Jerez specimens I am, after this lapse of time, barely sure of their existence. But of this I am sure; all those that I recollect seeing in South Europe were young, and, I fancy, all of the large form. I am sorry I did not take measurements."

The southern range of this Eagle is also somewhat more extended than has been recorded by Mr. Sharpe; it is a regular winter visitant to Egypt*, and it extends its migrations still further southward. Von Heuglin, in his 'Systematische Uebersicht,' p. 6, has a note, of which the following is a translation:—"*Aquila nævia*, Linn., is very common on the great lakes in Lower Egypt. In March and October it is travelling, often in companies of as many as ten individuals, throughout the whole of North-eastern Africa; the variety *A. clanga* (Pall. and Naum.) is as frequent as the genuine *A. nævia*"†.

Last year I saw an adult pair of *A. clanga* living in the Zoological Gardens at Antwerp, which I was assured had been brought from Sennaar, and which are the most southerly examples of this species that have come under my personal observation.

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* *Conf.* 'Rambles of a Naturalist,' by J. H. Gurney, jun., pp. 132 and 244.

† *Conf.* Von. Heuglin's 'Orn. Nordost-Afrika's,' vol. i. p. 47.

The geographical distribution of *A. rufonuchalis* is, as I have already observed, somewhat more limited than that of *A. clanga*; the most northerly locality for *A. rufonuchalis* with which I am acquainted is the neighbourhood of Dantzic. Like *A. clanga* it migrates southward in winter; and from Von Heuglin's remark, quoted above, it would appear to extend its migrations as far to the south as that species. The Norwich Museum possesses a specimen from Nubia and another from Beyrout, the former being the most southern and the latter the most eastern locality for this Eagle that I have personally verified; the most westerly specimen that I have seen is one from Switzerland, which is preserved in the Museum at Brussels.

A. rufonuchalis is a decidedly less numerous species than *A. clanga*, and has of late years become remarkably scarce, much more so than was formerly the case.

The nearly allied *A. hastata* appears, as stated by Mr. Sharpe, to be limited to the Indian peninsula.

The only remaining species of the genus *Aquila* is *A. wahlbergi*, respecting which I have merely to mention that Mr. Sharpe's remark, "*Hab.* The whole of Africa," appears to me to be too sweeping. The Norwich Museum possesses specimens from Bissao, the White Nile, Abyssinia, and Nubia, which are the only localities for this species with which I am acquainted to the north of the Equator; whilst to the south of the Line, I am not aware that it has been obtained except in the localities mentioned in Mr. Sharpe's edition of Mr. Layard's 'Birds of South Africa,' at p. 36, viz. Caffraria, Kuruman, Mossamedes, and on the river Cunéné, and also in Damara Land, if, as I think most probable, it be an individual of this species, which is cited as from that country under the title of "*Aquila clanga*, Pallas, No. 23," in the Supplementary Catalogue of the Accipitres in the Leyden Museum, 15*.

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* Since writing the above I have observed that the occurrence of a second Damara example of this Eagle is recorded in the 'Journal für Ornithologie' for 1876, at p. 308.

XXVII.—*General Remarks on the Avifauna of Madagascar and the Mascarene Islands.* By Dr. G. Hartlaub*.

Five-and-thirty years ago, Isidore Geoffroy St.-Hilaire remarked that, if one had to classify the Island of Madagascar exclusively on zoological considerations, and without reference to its geographical situation, it could be shown to be neither Asiatic nor African, but quite different from either, and almost a fourth continent. And this fourth continent could be further proved to be, as regards its fauna, much more different from Africa, which lies so near to it, than from India, which is so far away. With these words, the correctness and pregnancy of which later investigations tend to bring into their full light, the French naturalist first stated the interesting problem for the solution of which an hypothesis based on scientific knowledge has recently been propounded; for this fourth continent of Isidore Geoffroy is Sclater's "Lemuria"—that sunken land which, containing parts of Africa, must have extended far eastwards over Southern India and Ceylon, and the highest points of which we recognize in the volcanic peaks of Bourbon and Mauritius, and in the central range of Madagascar itself—the last resorts of the mostly extinct Lemurine race which formerly peopled it. "The Farquhar Islands and the Seychelles in the north and the Coral-reef of Rodriguez and Calvados seem," says a recent writer, "to unite the ranges of its granitic hills with the Laccadives and Maldives and so on, with those mighty manifestations of Nature which the Neilgherries and adjoining ranges present to us in Southern India." When Wallace, whose utterances on this subject every one must read with the greatest interest, puts forward a former junction of Madagascar with Africa as beyond doubt—a junction which, however, must have terminated before the inroad into Africa of the more highly organized Mammals—every one will allow this opinion to be at all events well founded. But when he proceeds to state that the fauna of Madagascar is manifestly of African origin his assurances are based upon very slender grounds. In truth the individuality of the fauna of Madagascar is so unique that even that of New Zealand can hardly be compared with it. Wallace's attempted parallel between Madagascar and Africa, and the Antilles and South America, is, in our eyes, sufficiently disproven by the occurrence in the Antilles of Trochilidæ, one of the most characteristic forms of South America. But in Madagascar not a single one of the genera most characteristic of Africa occurs. This originality of the fauna is much too pronounced to allow Madagascar to be treated only as a "Subregion" or as an "aberrant part" of the Æthiopian Region.

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* Abstracted from the introduction to Dr. Hartlaub's new work 'Die Vögel Madagascars und der benachbarten Inselgruppen,' announced in our last issue (*anteà*, p. 258). These remarks give a summary of Dr. Hartlaub's conclusions as to the general aspect of the "Lemurian" Avifauna, which according to this excellent and most useful handbook, is now known to contain 284 species. Of the 220 species found in Madagascar itself, 104 are peculiar, and of these 30 so abnormal that they require to be referred to peculiar genera.

As already remarked, Isidore Geoffroy St.-Hilaire rightly put forward the remarkable relations of the fauna of the Madagascarian Subregion to India, at a time when it was very imperfectly known. To our astonishment we meet with, in both its subdivisions (Madagascar and the Mascarenes), the truly Indian genus *Hypsipetes*. Not less strange is the appearance of the genus *Copsychus* in Madagascar and the Seychelles, of the Indian type of *Dicrurus* (as represented by *D. waldeni*) on the Comoros, and of *Plotus melanogaster* instead of its African representative in Madagascar. Two birds of this island, *Ninox lugubris* and a *Cisticola*, are hardly separable from Indian species. Two others, *Scops rutilus* and *Anas bernieri*, are so like *Scops menadensis* and *Anas gibberifrons* that they are not easily distinguishable. The Indian *Charadrius geoffroyi* is no rarity in Madagascar. *Dromas* and *Gygis*, two characteristic forms of this subregion, one of Indian, the other of Oceanic origin, estrange it from Africa. A typical *Ploceus* of Madagascar (*P. sakalava*) belongs to the Indian *philippinus* group. The peculiar *Hartlaubia* is nearer to the Upper-Indian *Psaroglossa* than to any African form. The Indo-Australian group of the Artamidæ surprises us in

Madagascar with four modified representatives. *Mesites*, one of the most remarkable and scarcest birds of Madagascar, can only be naturally placed near the Indian *Eupetes*. Lastly, the occurrence of the Polynesian Rail (*Rallus pectoralis*) on Mauritius deserves special notice, although but a single example of it has been yet obtained.

In contrast to these important facts the points of connexion of the avifauna with Africa fall far into the background. The only species of the order Passeres certainly known to be common to Africa and the Lemurian Region is *Corvus scapulatus*. Besides this we can only reckon about 6 or 7 Birds of Prey, 3 Pigeons, 15 Waders, and 1 Palmiped as of African origin.

But the negative evidence is still stronger in the same direction. The groups of Musophagidæ, Coliidæ, Lamprotornithinæ, Buphagidæ, Capitonidæ, Indicatoridæ, Bucerotidæ, and Otidinæ, so eminently characteristic of Africa, are entirely absent here, besides the genera *Gypogeranus*, *Helotarsus*, *Coracias*, *Crateropus*, *Irrisor*, *Bradyornis*, *Dryoscopus*, *Laniarius*, *Telephonus*, *Prionops*, *Platystira*, *Saxicola*, *Picathartes*, *Balæniceps*, and others, which are remarkably rich in individuals and species in Africa. Besides this, Larks and Chats, which in the African fauna are specially prominent on account of their numerous forms as well as their individual and specific abundance, are only represented by a single species in Madagascar itself, and in the rest of the Subregion not at all.

In conclusion, if we take a glance at the families of the Madagascar Subregion as compared with those of Africa, four of these (Mesitidæ, Paictidæ, Eurycerotidæ and Leptosomidæ) are peculiar, whilst the Diurnal Accipitres, Pigeons, Honeyeaters, and Cuckoos are richest in species. In a considerable degree this is also the case with the orders Grallæ and Anseres. As contrasted with Africa, the Fringillidæ, Meropidæ, and Sturnidæ (represented by only one genus) are extraordinarily poor; on the other hand, the Coraciidæ, Laniidæ, Artamidæ, Turdidæ, Muscicapidæ, Pycnonotidæ, and Lusciniidæ are remarkable for their peculiarly modified types, and the Sittidæ, which are quite unrepresented in Africa, for the anomalous form *Hypherpes*.

XXVIII.—*Description of a new Species of* Calliste, *and of a new Humming-bird of the Genus* Heliangelus. By A. von Pelzeln, Hon. Memb. B.O.U.

CALLISTE ALBERTINÆ.

C. clare viridis, capite et mento summo rufo-castaneis, nucha flavescente, torque distincta nulla, campteriis rufo-castaneis, dorso postico et gastræo cæruleis, tibiis pallide rufis, rostro superiore nigrescente, inferiore corneo, pedibus cærulescenti-cinereis. Longit. 5″, alæ 2″ 8‴, caudæ 1″ 10‴.

Tanagra gyrola? (part.), Natterer, MS. Catal. n. 804.

Calliste gyroloides (part.), Pelzeln, Orn. Bras. p. 207 (Salto do Girao.)

Hab. Brasilia, Rio Madeira (Salto do Girao) (*Natterer*).

C. gyroloidi (Lafr.) similis, sed differt capite magis rufescente, nucha flavescente absque torque distincta, et præsertim campteriis rufo-castaneis nec aureis; a *C. gyrola* dorso posteriore cæruleo et campteriorum colore, a *C. desmaresti* iisdem characteribus et gastræo cæruleo discrepat; cum *C. lavinia,* Cassin, colore campteriorum convenit, sed tectricibus alarum et remigibus viridibus et gastræo cæruleo diversa.

Head, cheeks, and chin rufous chestnut, upper surface generally green; neck yellowish green, but without a distinct collar; shoulders bright reddish chestnut; rump and under surface blue; under tail-coverts green; thighs pale reddish.

The bright reddish chestnut colour of the shoulders distinguishes this bird from all known species of the *gyrola* group, with the exception of *C. lavinia*; but the latter differs in having the wing-coverts and outer edges of the secondary and shorter primary quills rufous, and the undersurface green, with exception of a longitudinal stripe of pale blue on the throat and another on the middle of the abdomen.

During a recent visit of Herr Taczanowski to Vienna, when I showed him Natterer's collection of birds' skins, he pointed out the difference of this red-shouldered bird from the individuals of *C. gyroloides,* under which name it had been previously comprised.

Subsequent careful examination of this bird and comparison with the allied species persuaded me that it was really of a distinct species, not yet described.

I take the liberty of dedicating this species to Countess Albertina Marschall, daughter of Count August Marschall, to whom science owes so many important contributions.

Natterer's notes on the unique specimen (a male) are the following :—

"Salto do Girao, October 8, 1829, in high forest on a lofty tree, together with other little birds. The bird was somewhat moulting. Iris dark brown. Bill black, not glossy, the under maxilla light corneous grey. Feet dark bluish ash-grey, nails of the same colour. Length 5¾″, breadth 8½″; the tail surpasses the wings 13‴."

For comparison I add Natterer's notes on a specimen of *C. gyroloides*.

"Male, adult, moulting, Marabitanas, March 1, 1831, in a high forest with other Tanagers. Iris dark brown. Bill blackish brown, the under maxilla on the basal half greyish. Feet dark bluish grey, washed with violet, nails dark grey. Length 5″ 10‴, breadth 8″ 2‴; the tail surpasses the wings 13‴."

Besides the male from Marabitanas, Natterer collected three other specimens of *C. gyroloides* on the Rio Xie.

HELIANGELUS TACZANOWSKII.

H. corpore supra viridi, pileo obscuriore, nucha et uropygio nitore aurescente, gula juguloque brunneo-nigris, plumis stricte albido, versus pectus latius viridi marginatis; gulæ macula rufo-violacea metallica vivide splendente, vitta pectorali transversali alba, circa 2‴ lata; abdomine viridi medio ochraceo admixto, tectricibus caudæ inferioribus albis, centro nigro-brunneis; caudæ parum rotundatæ rectricibus mediis aureo-viridibus, reliquis brunnescenti-chalybeis, nonnullis macula terminali minutissima alba; rostro nigro, pedibus nigrescentibus. Long. 3½″, alæ 2″ 4‴, rostri a fronte 8‴, caudæ 19‴; rectrices extimæ 2‴ breviores quam mediæ.

Hab. Bogota (*Herr Münsberg*).

Nearly allied to *H. clarissæ*; but the wings are considerably shorter; the bill, on the contrary, is rather longer (in the male and young male of *H. clarissæ* the wing measures 2½″, the bill 7½‴); the colour of the throat is darker in the female of *H. clarissæ*, and the metallic spot more bluish violet*.

From *H. strophianus*, Gould, the bird here described differs in its inferior dimensions, considerably longer bill, and tail not emarginate, but somewhat rounded: the uropygium is not brownish. It is distinguished from *H. spencii* by its somewhat superior size and by the want of the silver-green spot on the front; the metallic colour has not a faint, but an extremely vivid gloss.

I have named this species after Mr. L. Taczanowski, the eminent ornithologist of Warsaw.

XXIX.—*Additional Notes on the Ornithology of the Republic of Transvaal.* By Thomas Ayres. Communicated by John Henry Gurney.

(Plate VII.)

[It will be seen by a reference to 'The Ibis' for 1876, p. 433, that Mr. Ayres has already recorded 192 species of birds as observed by him in the Republic of Transvaal; the additional species contained in the following list are numbered consecutively with the above, and have all been identified by me from specimens sent over by Mr. Ayres, except where the contrary is stated.—J. H. G.]

193. Circus cineraceus (Mont.). Montagu's Harrier.
Circus pygargus (Sharpe's Layard, p. 12).

I found these Harriers very plentiful on my brother's farm, about fifteen miles from Potchefstroom, where they were hunting a large plot of ground from which the grass had been lately burnt, no doubt for insects or lizards killed by the fire; one of these Harriers which I opened had made a good meal of some Lark's eggs, shell and all.

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* I have no females of *H. clarissæ* for comparison, and must therefore rely on Mr. Gould's representation in the 'Monograph of Trochilidæ,' and Mulsant's dissertation (Hist. Nat. Ois. Mouch. iii. 86).

Scelospizias polyzonoides (Smith). Smith's Many-banded Hawk.

The stomach of one of the specimens sent contained the remains of mice.

Melierax musicus (Daud.). Chanting Hawk.

There is no doubt that these birds catch and devour hares; for a neighbour of mine brought me one of these Hawks which he shot on 3rd October in the act, and I found its stomach crammed with the flesh, and the claws covered with the fur of the hare.

They generally seem to keep to the low rocky ridges a few miles from Potchefstroom.

194. Buteo jakal (Daud.). Jackal Buzzard.

One that I opened contained the remains of a Snipe, no doubt a wounded bird that he had picked up easily, another a large toad.

[Five specimens sent were all immature.—J. H. G.]

195. Buteo desertorum (Daud.). Desert-Buzzard.

[One specimen sent, an adult female shot on 24th April.—J. H. G.]

196. Gypohierax angolensis (Gmel.). Vulturine Sea-Eagle.

The specimen sent is the only one that has come under my notice; it was shot on a willow tree in the town of Potchefstroom; the stomach was quite empty.

[This specimen is in immature plumage. I believe that this species has never before been recorded from so southern a locality.—J. H. G.]

Haliaëtus vocifer (Daud.). Vociferous Sea-Eagle.

This Eagle only makes its appearance in this part of the country occasionally, and then invariably feeds on carrion, such as dead oxen or horses, though there are plenty of fish in the Vaal river, which I should fancy it might very easily live upon if it had the inclination to do so.

Circaëtus pectoralis, Smith. Black-crested Harrier Eagle.

One of the specimens sent contained a large toad, swallowed whole.

Falco biarmicus, Temm. South-African Lanner.

This Falcon breeds in the Lydenberg district in June and July. My brother has two young ones now (October) nearly full-fledged and able to fly; they are exceedingly tame and intelligent, and certainly might be very easily trained to capture game for their owner.

Erythropus amurensis (Radde). Eastern Red-footed Hobby.

[Mr. Ayres forwards three specimens of this Falcon, all obtained in the neighbourhood of Potchefstroom, and all males—two adults and one immature: one of the former is labelled as shot 29th January, the others have no dates attached to them. The males of this species are certainly more often sent to this country from South Africa than the females, which looks as if the latter less frequently extended their migrations to the southern part of the African continent than the males.—J. H. G.]

197. Tinnunculus rupicola (Daud.). Lesser South-African Kestrel.

This Kestrel has been rather more plentiful in this district the last season or two than formerly; possibly the mice have increased.

Scops leucotis (Temm.). White-faced Scops Owl.

I met with four of these Owls last winter, and got three of them: the stomach of one was well filled with the remains of mice; the others were empty. They are decidedly scarce here, and, I rather think, leave the neighbourhood in the summer.

Caprimulgus rufigena. Rufous-cheeked Goatsucker.

One specimen sent, sex not ascertained, shot 20th November.

[Mr. Sharpe, in his article on this species, in the second edition of Mr. Layard's work, says, "Four primaries are always spotted with white;" but in the present specimen only the first three primaries show a white spot, the corresponding spot on the fourth being a rufous buff; the pale tips to the two external rectrices are also not white, but pale buff, with fine mottlings of dark brown.—J. H. G.]

198. Eurystomus afer (Lath.). Cinnamon Roller.

This Roller my brother shot on his farm, where it was observed for some days, among the mimosa trees, before he killed it; it was solitary, and is the only one of the kind that we have seen.

Male shot 26th November: bill yellow; irides, tarsi, and feet brown.

[I believe this to be the most southerly occurrence of this Roller which has yet been recorded.—J. H. G.]

199. Cuculus canorus, Linn. European Cuckoo.

Male in change, shot 27th December 1875, at which time this species was exceedingly plentiful on my brother's farm, though the birds were shy and difficult to approach. Their flight was rapid; they were all amongst the mimosa trees.

[The specimen sent was changing from the ordinary nestling plumage to the adult dress, apparently without passing through the intermediate hepatic phase which is incident to some individuals of this species.—J. H. G.]

Coccystes jacobinus (Bodd.). Black-and-white Cuckoo.

These birds are summer visitors; I saw the first this year at the end of September.

200. Pogonorhynchus leucomelas (Bodd.). Pied Barbet.

This species is not uncommon amongst the low trees and scrub on the ranges in this neighbourhood, where its note soon attracts the collector's attention.

201. Dendropicus hartlaubi, Malh. Hartlaub's Woodpecker.

Male. Iris rose-colour; bill bluish horn; tarsi and feet dark bottle-green. Total length $6\frac{1}{4}$ inches, bill $\frac{14}{16}$, wing $3\frac{3}{4}$, tail 2, tarsus $\frac{11}{16}$.

This Woodpecker frequents the same localities as the Pied Barbet, but is less plentiful than that species.

TURDUS LETSITSIRUPA (Smith). Ground-scraper Thrush.

This Thrush is not uncommon amongst the mimosas.

202. SAXICOLA GALTONI (Strickland). Familiar Chat.

The specimen sent was killed on a farm about fifteen miles from Potchefstroom.

203. SAXICOLA TEPHRONOTA, n. sp. Ash-backed Wheatear.

A single specimen sent, which was shot on the low rocky ranges three miles from Potchefstroom; very few are to be found in this locality; sex not ascertained.

[I am not able to identify this Wheatear with any species hitherto described; and I therefore suggest for it the specific name of *tephronota,* which is in keeping with its ashy grey back. The following is a description of this specimen:—

Dimensions taken from the skin—total length 7·4 inches, culmen 0·8, wing from carpal joint 4·6, tail 2·6, tarsus 1·3.

The crown of the head is brownish grey, but shows a single dirty white feather, which differs from the adjoining plumage; the entire mantle, except the wing-coverts, clear pale bluish ash-grey; the lesser wing-coverts pure white; but some of the external feathers of these coverts have a black shaft-mark, and are tinged with slaty; the remaining coverts are black, more or less broadly edged with grey on the external web, but with one feather at the edge of the wing black, and immediately below this a small white spot; the quill-feathers of the wing dull black, very narrowly edged and tipped with grey, which is most conspicuous on the tertials; rump white; upper tail-coverts white, tipped with slaty; tail with the four central feathers wholly black, the two external pairs of rectrices entirely white; of the intermediate pair one feather is quite white, but the corresponding feather is slightly tinged with blackish grey on both webs towards the tip and for the last three quarters of an inch of its length, this tinge becoming stronger as it approaches the tip of the feather, which is white elsewhere.

The entire plumage of the underparts (other than the tail) is grey, dark at the base of the feathers, but pale, and slightly tinged with brown, towards the tips; there is, however, one white feather visible on the throat; the bill, tarsi, and feet are black.

Mr. Sharpe, at page 250 of his new edition of Mr. Layard's 'Birds of South Africa,' under the head of *Saxicola anderssoni*, has the following remark:—"The British Museum also possesses a pair of wholly grey birds (males), killed at Koy's Fountain* on the 18th and 21st June, 1862, and marked by Mr. Andersson as the young of this species." Mr. Sharpe has been good enough to compare the present specimen (which has been added to the collection of the British Museum) with the two examples from Koy's Fountain, above referred to, and agrees with me in considering that the three belong to the same species, and that this is distinct from *S. anderssoni*, and has not previously been described.

Both the Namaqua specimens, however, are of a somewhat darker grey on the mantle than the one obtained by Mr. Ayres, and especially so about the lower part of the back; one of the Koy's-Fountain birds has also more conspicuous black shaft-marks visible amongst the white feathers of the lesser wing-coverts than is the case with the Transvaal bird; it has also the following coloration of the tail: on one side the two outer rectrices are pure white, whilst the corresponding pair on the other side of the tail are black and white; of these the exterior feather is white, with the tip and the terminal half of the outer web black, the four central feathers entirely black, and the intermediate rectrices also black, but with the extreme base and the basal half of the inner web white. The other Namaqua specimen has the lesser wing-coverts greyish white, instead of pure white, and with some black feathers intermixed; the tail of this example has on one side the outermost feather pure white, and the next feather white with the terminal third black on both webs; on the other side of the tail the outermost feather is black, with the basal half white, while the next feather is entirely white; the four central rectrices are entirely black, and the intermediate ones black, with two thirds of the outer webs white.—J. H. G.]

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* Great Namaqua Land.

204. Stenostira scita (Vieill.). Mignard Flycatcher.
Stenostira longipes (Swains.).

This is a very scarce bird here; but a pair are very occasionally to be seen in winter, busily hunting for insects in the rose-hedges; like most of the smaller Flycatchers, they are exceedingly restless in their habits.

205. Bradyornis silens (Shaw). Silent Flycatcher.

Total length 7 inches, bill from gape $\frac{13}{16}$, ditto from forehead $\frac{1}{2}$, wing $4\frac{11}{16}$, tail $3\frac{1}{4}$, tarsus 1. Sex uncertain; shot 20th June; irides dusky hazel; bill, tarsi, and feet black. This is also a winter visitant, appearing either singly or in pairs.

206. Dicrurus musicus, Vieill. Musical Drongo.

The specimen sent is the only one I ever met with about here; it was observed about a garden for many days before it was killed.

[This specimen is remarkable for the presence of one pure white feather on the crown of the head; the abdomen and wing-linings are also slightly spotted with white.—J. H. G.]

207. Corvus capensis, Licht. South-African Rook.

[One specimen sent.—J. H. G.]

Hyphantornis mariquensis (Smith). Mariqua Weaver-bird.

These birds eat meat when they can get it; I saw them feeding on a lump of buck which was hanging up under my verandah.

Alauda conirostris, Sund. Pink-billed Lark.

Irides light-hazel; bill light reddish brown; tarsi and feet pale. The two specimens sent, which are probably a pair, were killed at one shot on 14th June, whilst feeding on the open flats amongst the short grass.

Columba phæonota, Gray. Roussard Pigeon.
Columba trigonigera, Bon.

This species has been exceedingly plentiful this last season;

the following are the measurements of a male—total length 13 inches, bill $\frac{15}{16}$, tarsus $1\frac{3}{8}$, wing $8\frac{3}{4}$, tail $4\frac{1}{8}$.

[The length of the wing given above by Mr. Ayres agrees with the measurements stated by Mr. Layard in the first edition of his work (p. 257), but is considerably less than that of a male from Damara Land, as noted by Mr. Andersson in the 'Birds of Damara Land,' p. 232.—J. H. G.]

TURTUR SENEGALENSIS (Linn.). Senegal Dove.

A pair of these Doves built a nest in a rose-hedge in June and laid two eggs; these I took, and in a fortnight they had built another nest and laid two more eggs. Their eggs are pure white, beautifully delicate and pretty.

208. NUMIDA CORONATA (Gray). Crowned Guinea-fowl.

The specimen sent, a male, weighed 3 lb. 2 oz., and measures as follows—entire length 22 inches, bill $1\frac{1}{4}$, tarsus $3\frac{1}{2}$, wing $10\frac{3}{4}$, tail $7\frac{1}{4}$. Casque pale yellowish ash-colour; bill pale ashy horn-colour, yellowish on the ridge of the upper mandible, and reddish at the gape; cere and bare skin round the nostrils and round the horn crimson; bare skin of the neck and round the eyes bright light blue; wattles blue, with crimson tips; tarsi and feet dusky, almost black.

[I may add to the above description that the upper moiety of the blue circle round the eyes is surrounded by an outer simicircle of crimson, formed by the edge of the crimson skin which surrounds the casque; the shape of the casque agrees with the description given by me in 'The Ibis' for 1868, p. 253.—J. H. G.]

FRANCOLINUS SWAINSONI, Smith. Swainson's Francolin.

The specimen sent was found breeding in the Waterberg district, and was brought to me with two of the eggs, the shells of which were exceedingly thick, approaching those of the Guinea-fowl.

EUPODOTIS CRISTATA (Scop.). Kori Bustard.

Though I often hear of 40-lb. Bustards being shot, I have never seen one any thing like this weight. The specimen sent, though a male, only weighed 16 lb.; it measured as follows—

total length 46 inches, wing 25, tail 14, bill from gape 4½, tarsus 10; it was shot 25th October, and had the pouch very apparent, commencing at the base of the tongue, where it was some three inches wide, and extending about five inches down the throat in the form of an isosceles triangle.

[Mr. E. C. Buxton informs me that he shot one of these Bustards, near the Lambomba Mountains, which weighed "nearly 40 lb."—J. H. G.]

209. Eupodotis afroides (Smith). Black-and-white-winged Bustard.

[I suspect that in this species the male is subject to a seasonal change, and only assumes the dress represented in Sir A. Smith's figure (pl. 19. fig. a) at the approach of the breeding-season. Of two males sent by Mr. Ayres, one shot 31st January is in very nearly full dress, but the other, killed on 4th May, is evidently in change, having a large portion of its plumage like that of the female, and apparently having been killed while in the course of assuming a dress resembling that of the hen bird.—J. H. G.]

Cursorius rufus, Gould. Burchell's Courser.

Male. Bill dusky, but the under mandible pale at the base; irides very dark hazel; tarsi and feet white.

This species breeds in November on the open flats outside the town of Potchefstroom.

[Mr. Ayres forwards one specimen killed in November, and two killed in June, the former of which was labelled as follows:—"18th November. A small mound of sand and gravel; eggs placed in a small depression in the centre; two eggs much incubated.—J. H. G.]

Cursorius bicinctus, Temm. Double-collared Courser.

Male. Shot near Potchefstroom 29th March. Bill black; irides dark hazel; tarsi and feet white.

This is a much scarcer bird than *C. rufus.*

Glareola nordmanni, Fisch. Nordmann's Pratincole.

Bill black, with the base and the edges of the mandibles red; tarsi and feet dusky; one specimen sent, shot 1st of October.

210. ÆGIALITES TRICOLLARIS (Vieill.). Three-collared Plover.

The specimen sent was shot on 24th March.

BALEARICA REGULORUM, Licht. Southern Crowned Crane.

Immature. This and three other young birds of the same age, and evidently from the same nest, were feeding together in a bit of swampy ground.

[This specimen, which was nearly full-grown, had the irides light ash-colour; the bill black, but with the base of the lower mandible pale; the bare skin between the bill and the eye black, the adjacent space, which is occupied by the wattles in the adult, thickly clothed with short yellowish white down; and the legs and feet ashy black. Its plumage differs from that of the adult bird in the following particulars:—The front part of the head, instead of being black, as in the adult, is a rich fulvous, with a very few small black spots intermixed; the crest, which is about half-grown, the back of the head, and the upper part of the neck and throat are of a similar hue; but the colour, especially on the neck and throat, is paler than on the forehead, and is varied on the sides of the neck by the dark bases of the feathers being apparent; the mantle is slaty black, with narrow tips to the feathers, some of these tips being rufous, others (especially those nearest the wings) being pale brown; the wing-coverts are white, but with most of the feathers variegated by a subterminal slate-coloured mark and a much narrower rufous brown tip, and with the further exception of the coverts of the tertials, in which each feather is wholly banded with alternate transverse bars of slate-colour and rufous; on the bastard wing the feathers are more slate-coloured than in the adult, but have not also, as in the adult, a tinge of rufous; the lower back is of a dark slate-colour intermingled with white, and with rufous tips to those feathers which lie nearest to the thighs and upper tail-coverts, the latter of which are black, tipped with fulvous; the under tail-coverts are composed of long downy feathers of a pale buff-colour, transversely barred with dull black, the abdomen and thighs are pale buff, slightly mingled with black;

the breast and flanks are slaty black, with narrow pale buff edges.

This specimen is now preserved in the British Museum.—J. H. G.]

Ardea goliath, Temm. Goliath Heron.

This is one of the scarcest Herons here; it is wonderful the size of the fishes these fellows can swallow; the one sent had a 2-lb. carp in him.

211. Ardea cinerea, Linn. Common Heron.

[The specimen sent was shot 7th April; it is evidently a young bird which had very recently left the nest.—J. H. G.]

212. Herodias intermedia (Wagl.). Short-billed Egret.

Female killed 17th June. Total length 28 inches, bill from gape 3⅞, ditto from forehead 3, wing 12¼, tarsus 5, tail 5½.

Irides gamboge-yellow; bill orange-yellow; bare skin adjoining the eyes pale greenish yellow; tarsi and feet bluish.

Female killed 14th September. Total length 27 inches, bill from gape 3½, ditto from forehead 2⅞, wing 11¾, tarsus 4½, tail 5½.

Irides tawny yellow; bill chrome yellow, darker at the base; bare skin adjoining the eyes bright verdigris green; shanks chrome yellow; tarsi dusky, almost black, except the upper portion, which was chrome yellow.

[I imagine that this is the species included in Mr. Barratt's list in 'The Ibis' for 1876, p. 210, under the name of *Ardea egretta*, a designation to which I believe it is not correctly entitled.—J. H. G.]

Herodias garzetta (Linn). Little Egret.

Shot 18th January, not in nuptial dress; irides pale yellow; bill dusky, but the under mandible pinkish at the base; shanks and tarsi dusky black; feet pale yellowish green.

Ardeola comata (Pall). Squacco Heron.

Male, killed 15th January, not in nuptial dress; irides pale yellow, orange on the outer edge; bare skin between the eye and the bill, and also the base of the bill, greenish, upper mandible dusky, lower mandible and commissure yellow; bill from gape $3\frac{1}{4}$ inches, ditto from forehead $2\frac{9}{16}$, wing $8\frac{3}{4}$, tail $3\frac{1}{8}$, tarsus $2\frac{7}{8}$.

[On comparing the above measurements with a male and female previously sent from Transvaal, I find that the dimensions of the male of this pair agree almost exactly with the above, but the female is decidedly smaller, measuring as follows—bill from forehead $2\frac{7}{16}$ inches, wing $7\frac{7}{8}$, tarsus 2*.

As this is the only species of this restricted group which I have seen from Transvaal, I suspect that it may be the same as that quoted in Mr. Barratt's list as "*Ardea leucoptera*," vide Ibis, 1876, p. 210†.—J. H. G.]

213. Numenius arquatus (Linn.). Common Curlew.

Female shot 9th October; total length 25 inches, bill from forehead $6\frac{5}{8}$, wing $12\frac{1}{4}$, tarsus 4.

This is a very scarce bird indeed in these parts; two specimens were seen last year, of which this is one; I did not hear either of them utter the usual cry of the Curlew; both were silent.

214. Numenius phæopus (Linn.). Common Whimbrel.

I shot a Whimbrel during the month of November, the only one I have ever seen.

[This identification rests on Mr. Ayres's authority, the specimen not having been forwarded.—J. H. G.]

Philomachus pugnax (Linn.). Ruff.

The male sent was shot from a flock on 24th August; it is the most nearly in full plumage of any specimen that I have seen.

[This example retains the remains of the two occipital tufts and of the portion of the ruff between them; the remaining tuft-plumes are about three quarters of an inch in length, the intervening feathers being much shorter; it also retains considerable remains of nuptial dress, both on the mantle and on the under surface. Mr. Ayres sends, as well, a female in winter dress, shot 7th January.—J. H. G.]

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* A similar disparity in the size of the sexes has been noticed in an allied Indian species, *Ardeola grayi*, Sykes, *vide* 'Stray Feathers,' vol. iv. p. 350.

† Mr. Barratt also includes in his list "*Ardetta minuta*," which I venture to think may be an error, as I have never seen this species from South Africa, but only the nearly allied but smaller species, *A. podiceps*, Bon. (*conf.* Ibis, 1873, p. 257).—J. H. G.

TOTANUS GLAREOLA (Linn.). Wood-Sandpiper.

Found on the Snipe-ground.

[Mr. Ayres forwards two females—one shot 25th February, which has partly assumed the nuptial dress, the other, killed 25th March, which has fully attained it.—J. H. G.]

215. RHYNCHÆA CAPENSIS (Linn.). African Painted Snipe.

Of sixty Snipe shot by some friends of mine, only two were of this species, two *Gallinago major*, and the remainder *G. æquatorialis*.

GALLINAGO MAJOR (Gmel.). Solitary Snipe.

Of the three specimens sent, a male and female were shot on 26th March, and a female on 20th April.

RALLUS CÆRULESCENS, Gmel. Caffre Rail.

Male, shot 4th June. Irides blood-red; bill the same, but dusky along the ridge; tarsi and feet dull brownish red, tinged with dusky.

Female, shot 17th May. Irides reddish hazel; bill scarlet, but dusky on the ridge; tarsi dull brick-red, tinged with dusky.

This is the commonest Rail we have, and a most noisy little fellow, making wonderfully loud and startling cries for his size; the stomach of one sent contained legs of a crab.

216. CREX PRATENSIS (Bechst.). Corn-Crake.

This species is very scarce here; the specimen sent was shot on 10th March.

PORZANA PYGMÆA, Naum. Baillon's Crake.

Male, shot 20th April, in immature plumage on the throat and breast. Irides tawny; bill greenish, but dusky on the ridge; tarsi and feet pale dusky greenish.

Female, shot 22nd January, in adult dress. Irides reddish orange; bill grass-green, but dusky on the ridge; tarsi and feet pale greenish.

These Crakes are occasionally to be got whilst Snipe-shooting.

217. Porzana egregia, Pet. Greater African Crake.

Male, shot 14th May. Irides orange, eyelids bright red; bill pale bluish horn-colour, dusky on the ridge, and pale at the base of the under mandible; tarsi and feet dusky pale; total length $9\frac{3}{4}$ inches, bill 1, tarsus 1, wing $4\frac{3}{4}$, tail $1\frac{3}{4}$.

The only specimen I have seen; I shot it whilst trying for Snipe in the marsh close by Potchefstroom; it must be exceedingly rare here.

[This scarce Crake is described in Finsch and Hartlaub's 'Vögel Ost-Afrika's,' p. 778, where the details of its synonymy will be found *in extenso*.—J. H. G.]

218. Coturnicops ayresi, n. sp. Ayres' Crake. (Plate VII.)

This pretty little fellow we call the White-winged Rail, from the white patch on the wing, which is very conspicuous when it is flushed and making away. I have only noticed this species here the last two seasons; it is very scarce; the two sent are the only specimens I have obtained, though I have seen one or two others.

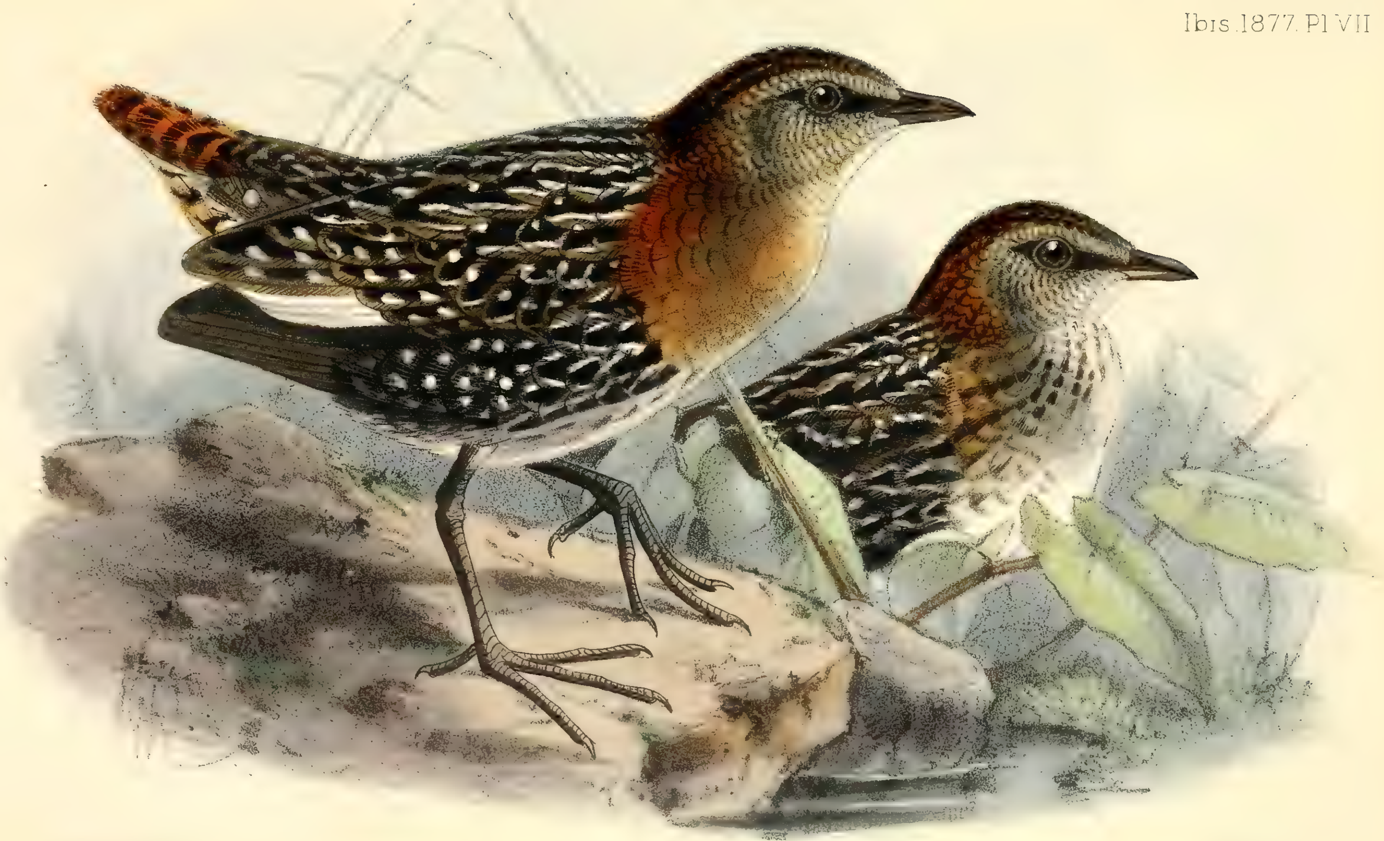
The bird shot the 4th October contained water-insects in its stomach.

Female (apparently adult) shot 24th November. Total length $6\frac{1}{4}$ inches, bill $\frac{9}{16}$, tarsus $\frac{15}{16}$, wing 3, tail $1\frac{3}{4}$; irides ashy hazel; bill dusky, under mandible pale; tarsi and feet dusky.

Female (apparently immature) shot 4th October. Total length $6\frac{1}{4}$ inches, bill $\frac{1}{2}$, tarsus 1, wing 3, tail $1\frac{1}{2}$; bill pale dusky, darkest on the ridge; tarsi and feet dusky pink.

[On receiving the two Crakes above mentioned I was unable to refer them to any species with which I was acquainted, and I therefore sought the kind assistance of Mr. Salvin, who confirmed me in the belief that they belong to a species hitherto undescribed, which I propose should bear the name of my valued correspondent Mr. Thomas Ayres, to whose researches we are indebted for this interesting acquisition.

Mr. Salvin has also been so good as to point out to me that



J G Keulemans lith

M & N Hanhart imp

COTURNICOPS AYRESI

AMERICAN MUSEUM
CENTRAL PARK,
NEW YORK.
OF NATURAL HISTORY.

the present species forms a third in the restricted subgenus *Coturnicops*, the two previously known being the North-American *C. noveboracensis* (Gmel.), and the Asiatic *C. exquisita*, Swinhoe, figured in 'The Ibis' for 1875, pl. iii., both of which are, like their southern congener, remarkable for the conspicuously white secondary feathers of the wing.

The two specimens are both marked by Mr. Ayres as females, the one being apparently adult, and the other immature; the latter I have placed in the British Museum, retaining the former in my own collection.

Both examples are represented in the annexed plate, which will enable them to be readily recognized; but I may add the following description of their coloration and marking :—

Female adult. Crown of head and back of neck blackish brown, interspersed with dark rufous-brown spots, which are more numerous on the neck than on the head; sides of head mottled with pale and dark brown, the former slightly preponderating; sides of neck rich rufous brown, with narrow blackish-brown tips to the feathers; back black, with narrow white edgings to the sides of the feathers, beyond which, in some of the feathers, an outer edging of olive-brown is perceptible; similar but more conspicuous brown edgings occur on the feathers of the greater and median wing-coverts, which, with this exception, are blackish brown, as are also the least coverts, all the coverts being more or less spotted with white; the primaries dull brown, the fifth and subsequent ones being very slightly tipped with white; all the secondaries pure white, except a brown shaft-mark, slightly spreading onto the webs at the base and tip, and excepting also the last feather, which is slate-coloured, mottled with white; upper tail-coverts transversely marked with alternate bars of dark rufous and blackish brown, the latter being the broader; chin white, slightly tinged with rufous; and the throat the same, but with the feathers very narrowly edged with blackish brown; breast rufous brown, but paler than the sides of the neck; flanks and abdomen mingled black and white, the black predominating on the flanks, the white on the abdomen; tibiæ resembling on the sides the coloration of the flanks, and on the front that of the abdomen; under tail-coverts transversely and alternately barred with pale rufous and black; wing-linings white, slightly mottled about the edges of the wing with blackish brown; axillaries white, mingled with slaty brown.

The immature female resembles the above, but shows more of the olive-brown edgings to the feathers of the mantle, and wants the rufous tint on the breast and sides of the neck, the former being a dirty white, the latter two shades of brown, the centres of the feathers being darker than the edges.—J. H. G.]

219. Alecthelia dimidiata (Smith). South-African Rufous-chested Crake.

Alecthelia ruficollis, Gray.

This species inhabits the Snipe-grounds, but is scarce and difficult to flush.

[In 'The Ibis' for 1859, p. 249, and for 1868, p. 261, I incorrectly applied to this species the English name of "Jardine's Crake," which properly belongs to its smaller congener, *A. jardinei* (Smith).—J. H. G.]

220. Nettapus madagascariensis (Gmel.). Madagascar Dwarf-Goose.

A pair of these little Geese were shot in April on the Vaal river, fourteen miles from Potchefstroom, and are in the possession of Dr. Exton of Bloemfontein.

221. Graculus africanus, Gray. Long-tailed African Cormorant.

Male in winter plumage, shot near Potchefstroom 17th May. Irides light ashy brown; bill pale, but dusky on the ridge; tarsi and feet black.

[I take this opportunity of correcting a clerical error which occurred in 'The Ibis' for 1876 at p. 430. For "*Enneoctonus collaris*" read *E. collurio*.—J. H. G.]

XXX.—*Notes on the Avifauna of New Caledonia.* By Edgar L. Layard, C.M.G., F.Z.S., &c., H.B.M. Consul, and E. Leopold C. Layard, Vice-Consul, at Nouméa.

We hope the readers of 'The Ibis' will not think us presumptuous if, after a residence of only six months in New Caledonia, where even our excursions have been confined to the neighbourhood of Nouméa, we make so bold as to write some "Notes on the Avifauna" of the island.

We should premise that we believe ourselves to be in possession of all the literature extant on the ornithology of the island and the "Loyalty Group," which we shall always include in our "Notes." We have the articles in the 'Revue Zoologique,' 1860, by MM. Verreaux and Des Murs. While in Sydney for his health, Mr. E. L. Layard was fortunate enough to find in the extensive and valuable library of that well-known naturalist Dr. George Bennett (the contents of which were most liberally placed at his disposal by his old and valued friend) an excellent paper by M. Henri Jouan, entitled "Notes sur la Faune Ornithologique de la Nouvelle Calédonie," in the 'Mémoires de la Société Impériale des Sciences Naturelles de Cherbourg,' tome ix., p. 197 (1863). From this he copied descriptions of all the *named* species, a few others being alluded to without any designation; it is therefore impossible to say to what they refer. Then we have Brenchleys's 'Cruise of the "Curaçoa,"' G. R. Gray's 'Birds of the Tropical Islands,' and Finsch and Hartlaub's 'Ornithology of Fiji, Tonga, and Samoa.' A small Colonial Government Library here has a fine series of the travels and voyages of all the old French navigators; and Mr. F. W. Hutton, of the Otago Museum in New Zealand, has been kind enough to copy out for us descriptions of New-Caledonian birds from works accessible to him, such as Forster's 'Voyage' &c. We thus think we are in a position to speak with some show of authority on the subject.

Our catalogue of species known in or said to inhabit New Caledonia and the Loyalty Islands, amounts to just 100. MM. Verreaux and Des Murs catalogued (1860) 76 species;

M. Jouan (1863) about 40 species, of which 5 do not seem to be included in MM. Verreaux and Des Murs's list.

If any of our readers can tell us where we can find information on New-Caledonian birds, other than that we have mentioned, we shall be most thankful.

Our brethren of 'The Ibis,' will sympathize with us when we tell them of the horror that fell like a thick darkness on our minds when, in conversation with the gentlemen who came off to H.M.S. 'Barracouta' to welcome us on our arrival, we were told that no shooting was allowed on any pretext, as the birds were wanted to kill the locusts! Visions of dull despair, if not of actual suicide, floated over us! With ample spare time to work to be condemned to idleness! And what other amusements had we? Oh! there are billiard-tables at the restaurants and hotels! These offered no attractions to either of us. What was to be done? A day or two after our landing, a kind lady friend offered to drive us out to a pretty spot called Ansevata, where she was going to make a visit. We had driven there the day of our landing, and had noted with hungry eyes some lovely *Rhipiduræ*, yellow-billed *Pachycephalæ*, an *Aplonis*, a Hawk, and a Gull or two, and various small "unknowns."

The father looked at the son; the son divining the thought in his parent's brain pronounced the magic name "Long Tom." Parent, in his blandest and most insinuating tones:—"My dear Madam! would you object to our bringing a tiny little collecting-gun with us? it makes no noise hardly, and, as it is a breechloader, will not be carried loaded in the carriage!" Son, persuasively:—"We can pop it in the hood behind there, and not a soul can see it." Lady, graciously:—"Oh yes, I don't mind a gun; and you'll get me a bird for my hat." Chorus of parent and son:—"Oh yes, the loveliest we can find!" In a few minutes the faithful "Long Tom" is unshipped from his stock, rolled up in a bag, and stowed away in the hood, a dozen cartridges dropt into our pockets, and we are off. We felt as gloriously happy as two school-boys out of bounds, and thoroughly enjoyed our poaching expedition! Our fair friend dropped us by a nice bit of bush, and promised to give us one hour; soon the long gun is pointed well up in a tree-top, the trigger pulled, and down comes a bird new to us!

It belonged to a species that frequents the bush, poking about branches, searching the leaves (chiefly the undersides) and blossoms in search of their insect food. Their habits reminded me of our Fijian *Monarcha*; L. L. says they utter a sharp shrill cry or note.

While in New South Wales I procured specimens of *Gerygone albogularis*, Gould, and *Acanthiza pusilla* (Lath.). To the former our bird bears a close resemblance in form and colour; but with the latter it shows no relationship. In the P. Z. S. 1859, p. 161, Mr. G. R. Gray described a New-Caledonian bird under the name of *Acanthiza flavolateralis*; and the description accords pretty well with our specimen; but if Mr. Gray's bird is a true *Acanthiza*, our bird must be of a different species. Only a comparison with the type specimens in England will satisfactorily determine this; I (E. L. L.) therefore name our new bird *Gerygone flavolateralis*; so that I shall not make a synonym if I have described a species already known, but only transferred it to its right genus *.

The next shot fell to L. L.'s turn, and produced the lovely yellow-billed *Pachycephala xanthetræa*. These pretty Bush-Shrikes appear not to be uncommon round Nouméa; they frequent the dense bush, not affecting the open Gum-tree forest. Their food consists of insects of all kinds, which they capture at rest or on the wing, darting at them as they pass their perch.

It is singular that the sole *white*-throated *Pachycephala* in Fiji (*P. vitiensis*) should be found in Kandavu, the southernmost island of the group, and almost, if not quite, *in the same latitude* as the northern part of New Caledonia. Here *all* the species are *white*-throated. In Fiji, moreover, they are all *yellow* on the underparts; here some are yellow, some more or less *rufous*, approaching in this respect the Australian

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[* Mr. Sharpe has kindly compared Mr. Layard's skin for us with Mr. Gray's type, and pronounces them to be specifically identical; but Mr. Layard's view as to its generic affinities is undoubtedly correct.—Edd.]

forms, some of which are thus coloured. This island would seem, therefore, to be a point where the Polynesian and Australian forms unite.

While we were cleaning the blood from our prize, stuffing its mouth, &c. previous to suspending it on the stick, a Fantail Flycatcher came and chattered the usual note of defiance at us; so, as we sat on a fallen tree-trunk, E. L. L. lifted the long gun; "crack," and the bird came fluttering down; away scudded L. L. through the tangled bush, now dodging round a clump, now creeping under, till he was lost to view! Presently he returned, panting and blowing, the quarry, only broken-winged, having led him a chase of about a hundred yards, right down to the sea-beach! and this a weak-legged little *Rhipidura*! but, *mirabile dictu,* this too turns out to be new to us also!

The only *Rhipidura* we can find described from here is *R. albiscapa,* Gould. Now specimens of this bird lie before us, procured by E. L. L. in New South Wales, and they are quite different from the New Caledonian bird; neither will it at all accord with the description in Gould's 'Hand-book'*.

In general appearance this bird is far more robust than *R. albiscapa,* and more generally rufous; and I should think it impossible to confound the two, having either the description or specimens before one. In habits it is similar; indeed the whole of the species of the genus that I have met with resemble each other in this respect.

L. L. now wandered off into the scrub; and from the frequent sharp cracks emitted by "Long Tom" it was evident he was not idle. After a while he reappeared, bringing a couple of *Aplonis,* apparently of different species, and a Red-breasted Flycatcher, *Myiagra caledonica.* He reported that he had undoubtedly seen a Blackbird, a veritable *Merula*†, scratching among the dead leaves; but the inopportune snap-

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[* Mr. Layard has sent us a specimen of this bird, and we have no doubt that it is the species described by Mons. E. Marie as *Rhipidura verreauxi* in the paper referred to at the end of Mr. Layard's "Notes."—Edd.]

[† Probably *Turdus xanthopus,* Forst.—Edd.]

ping of a branch underfoot had scared it before a shot could be obtained.

We had now six birds on the stick; and it was time we returned to the rendezvous for our fair friend, who soon hove in sight with her sable "Jehu," and immediately claimed the *Myiagra* for her hat!! She was promised a far lovelier specimen, *Myzomela sanguinolenta*, one of which had gleamed like a crimson flash before our eyes,—a promise, we need hardly say, faithfully kept.

Such was our first hour's collecting in New Caledonia. Ill health, and absence in Australia in consequence, has prevented E. L. L. from again visiting Ansevata; but L. L. has has frequently made it the scene of his early morning peregrinations, and has reaped a fair harvest, of which we shall write at another time.

But some will ask, "How about the prohibition? Here are H.M. Consul and the V.-C. breaking the laws!" Not so fast, good brother! We discovered the remains of a museum in the cellars of the "Maire;" and we learned that the Government was going to build two rooms for its reception; so we made the following offer to the Government:—

"If you will give us a special permit to shoot, we will supply the museum with specimens, arrange and clean those you have got, and otherwise help you; and we will carefully abstain from shooting any of the birds you have imported to eat the locusts—Sparrows and "Merles des îles Philippines" (whatever these latter may be); and we will help you in importing proper species for this work, having had some experience in this matter." His Excellency, Admiral Pritzbuer, immediately acceded to our request, and armed us with a "permis spécial;" and so we don't go "poaching" any more!

The first occasion of showing the "permis" was charming. L. L. was returning one morning with some birds on a stick, as usual, when he was accosted by a gendarme, who requested him to sell the "gibier"! He wanted them to eat (these fellows have eaten all the imported Pheasants, &c.). On L. L.'s refusing, the man, who was joined by the commandant of the gendarmerie, suddenly bethought him of the illegality of the shooting. We must state that L. L. was dressed in one of our collecting-suits, which we had made for Para and the Philippine Islands, thin, blue material, fitting close, and full of pockets. In colour it resembles the stuff worn by the peasantry here.

In reply to his now angry tone, L. L. flourished his "permis" at him, and the mien of "Dogberry" was instantly changed. "Par bleu! it's the English Vice-Consul! Mille pardones. (Bows and scrapes.) How could he know Monsieur in that dress. (Handshaking and fraternité.) Monsieur and M. le Consul were great zoologists. He had orders to help MM. in every thing (in truth, orders have been sent, by our kind friend the Governor, through all the provinces that in case we travel every help should be given us). Had Monsieur had 'bon succès,'" &c. (More bows and scrapes, and exeunt omnes.)

The most interesting bird obtained the morning we visited Ansevata was, to us, a novelty, both as to its genus and species; nor can we discover any clue to it amongst the papers and descriptions already referred to.

It was shot by L. L. in thick, low scrub, almost on the sea-beach, where it was observed. It progresses rapidly by short powerful leaps from bough to bough. He did not hear it utter any note, as he only had a very short time to observe it in*.

P.S. February 2nd.—Since writing the above, I this morning paid a visit to Ansevata, hoping to procure another *Rhipidura*; and close to the place where we shot the other I soon found a pair of birds. They struck me as very small; and my astonishment may well be imagined when, on picking up one that fell to the long gun's destructive powers, I found I had the bird that had been described as the *R. albiscapa* from

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[* This specimen, which has been sent to us for examination by Mr. Layard, seems referable to the species described by J. Verreaux (Nouv. Arch. du Mus. Bull. v. p. 17, t. i. f. 2) as *Megalurulus mariæ*. The figure is by no means a good one, and shows a rather more rufous tint of plumage than Mr. Layard's example; but there can be little doubt that it is intended to represent an individual of the same species.—Edd.]

New Caledonia! but which was about one third less in size than the specimens of the true species I shot in Australia!! Other peculiarities struck me at the instant; and on comparing the two together I found my suspicions confirmed.

The underparts are more rufous than in the true *R. albiscapa* of Gould; and the greyish band that intervenes between the dark gular patch, or band, and the dirty nankeen of the underparts are wanting. If these differences in size and coloration are constant in other specimens, I propose to separate the species from *R. albiscapa,* and bestow upon it the cognomen *R. bulgeri,* to perpetuate the name of an old friend and valued collaborateur in Ornithology and other branches of Natural History.

[Mr. Layard has mentioned above the principal authorities on New-Caledonian Ornithology known to him, but does not appear to be acquainted with the most recent account of the birds of that island, which, indeed, seems to have been quite overlooked by ornithologists. This is a paper by Mons. E. Marie, published in the 'Actes de la Société Linnéenne de Bordeaux,' tom. xxvii. (1870), and entitled "Mélanges Ornithologiques sur la Faune de la Nouvelle-Calédonie et description d'une espèce nouvelle." It gives, besides the description of the new *Rhipidura verreauxi* above alluded to, a long note on the habits of *Rhinochetus jubatus.* Then follows a catalogue of New-Caledonian birds known to the author, which, being the most complete list yet drawn out, and being published in a not very accessible work, we think it advisable to reprint here, both for Mr. Layard's convenience, and also for the benefit of others who may be interested in the ornithology of New Caledonia. There can be little doubt that Mons. Marie was greatly assisted by the late Jules Verreaux in its compilation.—Edd.]

List of New-Caledonian Birds. By E. Marie.

1. Haliastur sphenurus (*Vieill.*).
2. Pandion leucocephalus (*Gould*).
3. Urospizias haplochroa (*Scl.*).
4. Urospizias approximans (*V. & H.*).
5. —— torquata (*Cuv.*).
6. Circus maillardi (*J. Verr.*).

7. Circus assimilis (*Kaup*).
8. Strix castanops, *Gould.*
9. —— delicatula, *Gould.*
10. Collocalia linchi (*Horsf.*).
11. Nymphicus cornutus (*Gm.*).
12. Platycercus caledonicus (*Gm.*).
13. Cyanorhamphus saisseti, *Verr. & Desm.*
14. Psitteuteles diadema, *Verr. & Desm.*
15. Trichoglossus deplanchei, *Verr. & Desm.*
16. Polychlorus magnus (*Gm.*).
17. Eudynamys taitensis (*Sparrm.*).
18. Cacomantis bronzinus, *G. R. Gray.*
19. Chalcites lucidus (*Gm.*).
20. Todirhamphus sanctus (*Bp.*).
21. Turdus xanthopus, *Forst.*
22. Megalurulus mariæ, *Verr.*
23. Petrœca, sp.? *Gray.*
24. Acanthiza flavolateralis, *G. R. Gray.*
25. Myiagra perspicillata, *G. R. Gray.*
26. —— viridinitens, *G. R. Gray.*
27. Rhipidura albiscapa (*Gould*).
28. —— verreauxi, *E. Marie.*
29. Eopsaltria variegata, *G. R. Gray.*
30. ——? caledonica, *G. R. Gray.*
31. —— flavigastra, *Verr. & Desm.*
32. Pachycephala xanthetræa (*Forst.*).
33. —— morariensis, *Verr. & Desm.*
34. —— assimilis, *Verr. & Desm.*
35. ——? sp.?
36. Artamus melaleucus (*Forst.*).
37. Campephaga caledonica (*Gm.*).
38. —— analis, *Verr. & Desm.*
39. Lalage montrouzieri, *Verr. & Desm.*
40. —— nævia? (*Gm.*).
41. Corvus coronoides? *Gould.*
42. Physocorax moneduloides (*Less.*).
43. Aplonis striata (*Gm.*).
44. —— nigroviridis (*Less.*).
45. —— viridigrisea, *G. R. Gray.*
46. —— atronitens, *G. R. Gray.*
47. —— caledonicus, *Bp.*
48. Leptornis aubryanus, *Verr. & Desm.*
49. Tropidorhynchus lessoni, *G. R. Gray.*
50. Glyciphila modesta, *G. R. Gray.*
51. —— poliotis, *G. R. Gray.*
52. —— fasciata (*Forst.*).
53. ——? chlorophæa (*Forst.*).
54. —— incana (*Lath.*).
55. Myzomela sanguinolenta, *Gould.*
56. —— erythrocephala, *Gould.*
57. Zosterops xanthochroa, *G. R. Gray.*
58. —— griseonota, *G. R. Gray.*
59. Erythrura psittacea (*Gm.*).
60. Ptilonopus greyi, *G. R. Gray.*
61. Drepanoptila holosericea (*Temm.*).
62. Phænorhina goliath, *G. R. Gray.*
63. Carpophaga ænea, *G. R. Gray.*
64. Ianthœnas hypœnochroa, *Gould.*
65. Chalcophaps longirostris, *Gould.*
66. Turnix varius (*Temm.*).
67. Rhinochetus jubatus, *Verr. & Desm.*
68. Esacus magnirostris, *Temm.*
69. Charadrius, sp.? *G. R. Gray.*
70. —— xanthochilus, *Wagl.*

71. Strepsilas interpres (*L.*).
72. Totanus incanus (*Gm.*)
73. Limosa uropygialis, *Gould.*
74. —— novæ-zealandiæ? *G. R Gray.*
75. Numenius uropygialis, *Gould.*
76. Schœniclus australis (*Gould*).
77. Hypotænidia philippensis (*Gm.*).
78. Porzana immaculata, *Gould.*
79. Zapornia leucophrys, *Gould.*
80. Gallirallus lafresnayanus, *Verr. & Desm.*
81. Porphyrio melanonotus, *Temm.*
82. —— bellus, *Gould.*
83. Egretta brevipes, *Verr. & Desm.*
84. Herodias novæ-hollandiæ (*Lath.*).
85. —— albolineata, *G. R. Gray.*
86. Nycticorax caledonicus (*Steph.*).
87. Œstrelata rostrata (*Peale*).
88. Larus novæ-hollandiæ, *Steph.*
89. Sterna gracilis, *Gould.*
90. —— melanauchen, *Temm.*
91. Thalasseus poliocercus, *Gould.*
92. —— pelecanoides (*King*).
93. Haliplana fuliginosa (*Gm.*).
94. Anous melanops, *Gould.*
95. Phaëton candidus (*Briss.*).
96. Phaëthon rubricauda (*Gm.*).
97. Tachypetes aquilus (*L.*).
98. —— minor (*Gm.*).
99. Phalacrocorax melanoleucus (*Vieill.*).
100. Dysporus sula (*L.*).
101. Anas superciliosa, *Gm.*
102. Mareca castanea, *Gould.*
103. Nyroca australis, *Gould.*
104. Spatula rhynchotis (*Lath.*).
105. Dendrocygna gouldi (*Bp.*).
106. Podiceps gularis, *Gould.*

XXXI.—*Notes on some Birds collected during the Exploration of the Fly River.* By M. L. D'Albertis, C.M.Z.S.*

It is more than a century since New Guinea became a country of great interest to the naturalist, and its avifauna attracted the attention of students and travellers. Yet, up to the present time, we may say that much more has to be done to bring to light all the treasures it possesses. Many attempts have been made to explore the country, and collections obtained by which we may guess at its rich fauna; but difficulties of many kinds have always prevented a thorough exploration. Nevertheless of late years we may congratulate ourselves on some marked results having been attained which we could hardly have expected.

After the earlier Dutch and French explorations, the celebrated Wallace visited Dorey, on the north-west coast, and obtained collections and made many observations and discoveries, for which science will always be indebted to him.

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* Reprinted from the 'Sydney Mail' of Feb. 24, 1877.

In 1872 I paid my first visit to the island on the north coast, and was successful enough to penetrate into the interior, where no white man had been before, and my exertions have been largely beneficial to science.

The track I had found was soon trodden again by Dr. A. B. Meyer, in 1873, and, as every naturalist knows, with splendid results. In 1875 the hunters of Mr. Bruijn and Dr. Beccari visited the same localities, and still found an abundance of novelties; yet I think much more is to be discovered in such a rich country; but no doubt the north-western peninsula is the part of all the great island which is best known. Only very recent explorations have been attempted on the south-eastern coast; and they have been attended with more or less marked results.

In 1875 I set myself to work on that new field, and prepared to explore the land which lies at the foot of Mount Yule. Without speaking of other rich collections I made there, I may mention that I got about 700 skins of birds, representing 186 species, of which a score were new to science, and many others were for the first time met with in New Guinea, while a large proportion belonged to the Australian avifauna both in genera and species. In the same year other explorers followed me to that new field. First, Mr. W. Macleay; a little later, the collectors employed by Mr. O. Stone pushed as far as Port Moresby; and Dr. James succeeded me at Yule Island, where, as it is known, he lost his life by the hands of the natives. Lately Mr. Goldie has been at Port Moresby collecting living plants for an English nursery, and has also succeeded in gathering a small collection of birds.

From all these collections we begin to have an insight into the fauna of the southern part of New Guinea, and materials for study which I have no doubt will afford sufficient data to show the intimate connexion between the Australian and so-called Papuan fauna, as well as precious materials for the study of the geographical distribution of species on the principle of evolution.

It remained to know something about the fauna of the central part of the large island; and in 1876, by the liberality of the Government of New South Wales and some gentlemen of this colony, I was enabled to go once more as a pioneer, as I had been at Mount Arfak and at Hall Sound, to find a new track to the heart of this mysterious land, which no doubt will be soon followed by other explorers, to the advancement of science, and probably of commerce.

Although collecting specimens of natural history was not the principal aim of the voyage, still, from the list of the birds collected and observed, we have, I may say, added a new link to the chain which connects the northern and southern avifauna of New Guinea with that of Australia. I hope that the few notes that I may add on some of the more interesting species will be acceptable.

From my list it seems that rapacious birds are scarce in the centre of New Guinea; but if we consider the difficulty of detecting such birds in their native forests, and when perched on the branches of lofty trees, or when flying above the dense mass of vegetation, we shall consider their scarcity to be rather an apparent than a real one.

Among the few collected, it is worth while to mention a pair of the beautiful and rare *Henicopernis longicauda*, which, although inhabiting the Aru Islands and, I think, also the north-west coast of New Guinea, is still very rare in the museums of Europe.

Among the Parrot family, of which my list is a little richer, I have first to mention the *Dasyptilus pecqueti*, which, judging by the shape of its bill and head, is almost an aberrant form among the family. This bird has been for many years very rare in the collections; and only one or two skins had reached Europe previous to 1872, when I got four fine specimens on the Arfak Mountains. Subsequently it has also been found by following explorers, but always few in number. It is generally an inhabitant of the mountains; but it is seen occasionally on the plain, and also very far up the Fly River.

I met with this bird while remaining for two days at the same anchorage. I saw about fifty coming to sleep on a very high tree in the evening, and starting in the morning a little after sunrise; but the bird is very shy, and for this reason not easy to be killed. The *Cyclopsittacus fuscifrons* is a very small Parrot, one of the smallest, and difficult to find in the dense foliage of the trees; but it is often brought to notice by its piercing whistle. It is not shy; and once find the tree on which it feeds, and it is easily secured. It is very similar to an allied species which I discovered at Hall Sound, named by Mr. Sclater *Cyclopsitta suavissima*, and resembles it in its habits.

Chalcopsittacus chloropterus is described by Prof. Salvadori as a new species; but, indeed, I cannot see how this bird is to be distinguished from *C. scintillatus*; for the distinctive characters pointed out by Salvadori I consider dependent only on the age, and not constant in all individuals of different age and different sex. Many other birds of this family may be added to my list by other explorers; for I saw many, especially among the *Charmosynæ*; but as I did not kill them, I do not mention them.

Buceros ruficollis is a common bird all over New Guinea, still I cannot say whether in the interior I saw this species, or another one, which is perhaps intermediate between *B. ruficollis* and the *Buceros* of the Solomon Islands; for I found some beaks of this bird in the houses of the natives so much smaller, although of adult birds. Therefore I am inclined to believe they may belong to a new species.

Among the Kingfishers there is, according to Salvadori, another new species—*Cyanalcyon stictolæma*; but I do not think it is a good species, and I believe the differences pointed out by him between this bird and *C. nigrocyanea* only depend on the sex or age of the specimen he had under his consideration. A specimen which I got in the same locality where I had the first one is by no means different from *C. nigrocyanea* of the Aru Islands.

An elegant bird which attracts the attention of the traveller is the *Dendrochelidon mystacea*, from its peculiar shape, and from the length of its wings and its forked tail. It is seen in the daytime at rest on some high dead tree; and in the evening and in the morning it flies about chasing the insects on which it feeds.

Flycatchers were very scarce; and, indeed, I cannot mention more than the beautiful *Monarcha chrysomelas,* which I had never collected before, and only saw once from New Guinea* in Mr. Stone's collection, and which is found also in the Solomon group. *Campephaga sloetii* is a rare bird in collections; but it seems to be distributed all over New Guinea, as I have found specimens on the Arfak, at Hall Sound, and lately far up the Fly River, and there the most numerous; but I could not get more than one, which I met with in a native's garden, feeding on the small berries of a high tree. Along the banks of the river, or on some gravel-flat of the river's bed, when the water was low, I saw another interesting small bird, which I discovered in the streams of Mount Arfak, in 1872. It is a lively bird, and is often seen giving chase on the wing to insects, on which it lives. It has been named by Salvadori *Monachella saxicolina.* The *Artamus leucogaster* is an Australian bird, but very common also in the eastern and central part of New Guinea. Its abode is on some old trunk projecting in the river's bed. There it is often seen waiting for insects, which it catches in flying, not unlike a Swallow. Near to the mouth of the river I found two little gems of the feathered family, *Nectarinia frenata* and *N. aspasia.* The first one is an Australian and Papuan bird; the second inhabits all New Guinea and many islands east and west of the same island. Perhaps on account of the flowerless season, the Meliphagidæ were scarce in number and species; but it is not improbable that I have found a new genus of this family. Only two species of *Eupetes* had been known for many years as inhabitants of New Guinea. Lately some new ones have been added—one from the west, the other from the east. The last one is also found in the bush up Fly River, and it has been named *Eupetes nigrocrissus* by Salvadori. Other species of this genus will be found in New Guinea; so I think it will not be considered absolutely a

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[* The species from New Guinea is distinct—*Monarcha melanonotus,* Sclater, P. Z. S. 1877, p. 100.—Edd.]

Malayan form. Only two Pittas, *P. mackloti* and *P. novæ-guineæ,* have been yet recorded among the Papuan birds. Now I may add a third one, which I found for the first time in New Guinea, and killed at Kataw River; but it inhabit also Cape York, and is plentiful on many of the Torres-Straits islands; that is, *Pitta assimilis.* So out of the three Pittas two are found in Australia also.

Large flocks of a *Calornis* were seen on the Alice river hunting after an insect, probably of the *Libellula* tribe, which was so abundant as to cover almost the surface of the river from bank to bank for many miles. They were so plentiful that when seen flying about a little above the water they conveyed to the mind the recollection of a heavy fall of snow. I could not identify this bird. Many other birds were engaged in a similar chase; and I remember a *Graucalus,* the *Gracula dumonti,* the *Merops ornatus,* and a *Eurystomus,* probably *E. crassirostris. Gracula dumontii* is, too, a common bird all over New Guinea; but I may mention that I never saw it so plentiful as on the upper part of Fly River.

Another Grakle, which I consider to be new to science, was very scarce, and only four specimens were seen, and two killed. Its description is as follows:—*Male.* Head, neck, and breast rich orange golden colour; throat and sides of the head dark blackish green; abdomen, above and below, black, each feather margined with dark shining green; rump and tail-coverts deep golden orange; belly yellow; under tail-coverts white, tipped with light yellow; wings and tail black; primaries white-spotted; bill, eyes, and feet yellow. The female is very similar to the male. I name this bird in honour of the Hon. John Robertson, Colonial Secretary of New South Wales, *Mino robertsoni**.

Manucodia keraudreni is found in Australia and New Guinea. The specimens from Cape York, once named *M. gouldi,* have been recently regarded as identical; but I have before me specimens from New Guinea and Cape York, and they are at once distinguishable from each other. The speci-

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[* Salvadori identifies this new species with *Melanopyrrhus orientalis,* i. e. *Gracula anais orientalis* of Schlegel, Bijdr. iv. p. 52 (Ann. Mus. Civ. Genova, v. p. 12).—EDD.]

mens from Cape York are of a uniform dark shining green, while specimens from New Guinea differ, having the wings, tail, and back of a rich shining purplish violet. *Gymnocorvus senex,* a very common bird all over New Guinea, is remarkable for the great differences of its plumage at different ages.

It was to be expected that in the centre of New Guinea many species of Paradise-birds were to be found; but only six species are given in my list, and certainly many others are to be discovered there. The most beautiful of them, no doubt, is the *Seleucides albus,* or Twelve-wired Bird of Paradise, and at the same time one of the rarest. On the upper part of the Fly River I saw it several times crossing the river very slowly; and often in the morning and before sunset it was seen on the top of some high tree, motionless and uttering its mournful note. It is a very suspicious bird, and for this, perhaps, is still rare in museums. It is found also on the north-west coast of New Guinea and Salawatti Island. *Cicinnurus regius* is a too common bird (also of the north coast and Aru Islands) to be spoken of. *Sericulus aureus* is found also all over New Guinea. I saw it on the Arfak Mountains, at Najabui, in the eastern peninsula, and now also up the Fly; but it is a rare and shy bird. Salvadori places this bird close to the *Chlamydoderæ,* but I cannot see more affinity in this bird with *Chlamydodera* than with *Cicinnurus*; at the same time, however, from its head, bill, wings, and shortness of the tail, I think it nearer to *Cicinnurus* than to the *Chlamydodera.* To say that it has not the same habits as the true Paradise-bird is not of much value; for nearly every species, or at least every genus, has its own habits.

Ptilorhis magnifica is found also in Australia and on the west coast of New Guinea and Salwatti. *Paradisea raggiana,* discovered at Orangerie Bay in 1873, by myself, extends its habitat up to the centre of New Guinea, and seems to be common enough; its plumes are used by the natives as head-dresses all over the country where the bird is found. Another bird, very closely allied to the last mentioned, is *Paradisea apoda,* or a new species resembling it very much. If admitted to be *P. apoda,* is it proper to say that it is the first time this bird has been met with in New Guinea, and that it was believed to be an inhabitant of the Aru Islands only. The fact of two species so alike living in the same locality is of some interest, and suggests some remarks. There are now four species of the known genus *Paradisea*—viz. *P. apoda, P. papuana, P. rubra,* and *P. raggiana.* The former two resemble each other very closely in the long yellow plumes at the side of the breast, while the last two resemble each other in the red colour of the same plumes, but differ in the two middle tail-feathers &c. So far as we know, *P. apoda* inhabits the Aru Islands and the mainland of New Guinea, south of the Charles-Louis Mountains; *Paradisea papuana,* the west to 131° long. E., and north of the above-mentioned range, so far as 141° long. E., and other islands north of New Guinea. The two red species, on the other hand, are living very far from each other; the *P. rubra* seems confined to Waigiou Island, and *P. raggiana* to the centre and eastern peninsula of New Guinea. But it is not improbable that *P. rubra* also may be found some day in New Guinea.

From the first insight we have of the fauna of Southern New Guinea, we have learned how in this part of the country Australian forms, genera, and species are abundant, and are generally found in preference to allied species now inhabiting the north-western coast; and I think that what applies to the animals will be also found in a less degree to apply to the plants. So we find a larger number of species inhabiting North Australia, Aru Islands, and New Guinea, because the narrow sea which separates the three countries may be easily crossed even by birds of not very great power in the wings.

So far as I can guess from my last visit to the central part of New Guinea, as well as from some fossils there collected, I think that all the flat land from the coast of Torres Strait up, perhaps, to the foot of the mountains has been submerged, and raised again at a not very distant time, and probably when the Aru Islands and Australia were separated from New Guinea. Plants and animals which, during the time of subsidence, could live on the mountains, at the new rising of the land descended to populate it again, more or less modified; and others immigrated from the nearest land, and especially from Australia, and established themselves there, probably undergoing some modifications, but at all events retaining much of the characters of the primitive type. And while the species inhabiting the lowlands on both sides of the mountains differ much, we find that those inhabiting the mountains are almost invariably the same on both sides, no matter what the difference of latitude or longitude may be. This may be explained; for the alpine forms were not subjected to sensible change of temperature, soil, &c., in their emigration, so long as they kept to the mountains; on the other hand, the forms of the plain cannot cross the high mountains without modification.

The geological union of Australia, the Aru Islands, and New Guinea in a recent time is to me a certainty; and I cannot consider the granitic peaks of Torres Straits but as the links of the chain which for a time joined Australia to New Guinea. Mount-Ernest Island, The Brothers, and Tawan Island, and all the other islands of Torres Straits, are faithful witnesses to this. When the fauna and flora of New Guinea and North Australia are better known and compared, especially reptiles, small mammals, freshwater fish, and other small animals of limited power for emigration, the fact will be proved. Although I propose to confine myself to the subject of birds, I cannot refrain from mentioning the existence of an *Echidna* in New Guinea. Very far up the Fly River I found in the natives' houses, carefully preserved, the quills of an *Echidna*, and also many arrows whose barbs are made with such quills. It is within my knowledge that the Rev. Mr. Lawes obtained at Port Moresby a young animal from the natives, which was described to me as like a *Platypus*; but I am inclined to believe it was a young *Echidna**. The importance of such a discovery needs no comment.

Among the Pigeon family I may mention *Carpophaga spilorrhoa*, *C. zoeæ*, *C. muellerii*, *Megoloprepia assimilis*, *Ptilo-*

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* The above had been written when I received from Italy the description of *Tachyglossus* (*Echidna*) *bruijnii* (W. Peters and Doria), founded on a portion of a skull found on the Arfak Mountains.

nopus superbus, P. ionozonus, P. coronulatus, P. aurantiifrons, and *Ptilonopus nanus,* which for the most part inhabit New Guinea, Aru Islands, and North Australia. A bird strictly Papuan, one of the largest of this family, is the Crested Pigeon, or *Goura,* of which four species are known, viz.—*G. victoriæ, G. coronata, G. albertisi,* and *G. sclateri,* although the former has not been yet found on the Papuan continent. *G. coronata* is found on the north-west, and *G. albertisi* on the eastern peninsulas, and *G. sclateri* in the central part of New Guinea, where I discovered it during my first visit to the Fly. During my second trip I found it also at Kataw River. If in the Papuan forest lives this gigantic form of the family, there we also find a dwarf in the rare and pretty *Ptilonopus nanus. Dendrocygna guttata, D. vagans, Nettapus pulchellus, Pelecanus conspicillatus, Hæmatopus longirostris, Mycteria australis,* and *Tachypetes prion,* &c. are all birds common to the Aru Islands and Australia, and only lately added to the list of New-Guinea birds. I wish I could give the specific name of a beautiful Cassowary, of which I possess a skin and skeleton; but so many species of this bird have been lately described, that I do not venture to say to which it belongs, though I am inclined to think it may be a *Casuarius australis**.

XXXII.—*Notices of Recent Publications.*

[Continued from p. 249.]

30. *Baldwin's 'Large and Small Game of Bengal.'*

[The Large and Small Game of Bengal and the North-western Provinces of India. By Captain J. H. Baldwin, F.G.S. 8vo. London: Henry S. King and Co.]

The larger portion of the 400 pages which compose this handsome volume is devoted to the various Mammals which in India attract the sportsman's first notice; but some 150 pages are likewise occupied with an account of the Pheasants, Pea-fowl, Partridges, Bustards, Plovers, and other so-called "Game-birds" of that rich and varied fauna. There is nothing scientific about the book; but the technical names from Jerdon and short descriptions of each species are given, and the many interesting notes on the habits of the birds and sporting adventures with them will no doubt render it very popular.

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* [It is more probably the species noticed by Sclater (P. Z. S. 1875, p. 86) as *C. beccarii,* but which, we believe, Prof. Salvadori considers not to be identical with *C. beccarii* of the Aru Islands.—Edd.]

31. '*Vagrancy Acts.*'

[Vagrancy Acts. By A. C. McM., 25th March, 1875. For Private Circulation. Trimulgherry: printed at the Military-Prison Press. 1 vol., 8vo, 260 pp.]

Under this curious title a well known Indian sportsman, who usually rejoices in the pseudonym of "Vagrant," has reprinted a series of his papers upon the field-sports of India, amongst which are many of interest to the ornithologist. They contain chiefly observations made at some of the hill-stations of Madras and Central India, though there are also some notes on the birds of Burmah.

32. *Orton's 'Andes and the Amazon.'*

[The Andes and the Amazon; or across the continent of South America. By James Orton, A.M. Third edition, revised and enlarged, containing notes of a second journey across the continent from Para to Lima and Lake Titicaca. 8vo. New York: 1876.]

Professor Orton has published a third edition of this instructive work, which is probably well known to most of our readers—though, except the chapter "On Condors and Humming-birds," there is nothing strictly ornithological in it. In his second journey Prof. Orton ascended the Amazons to Yurimaguas on the Huallaga (about a month's voyage, not including stoppages), and crossed thence to the Pacific by Balsa Puerto, Moyobamba, Chachapoyas, and Cajamarca. We can fancy no more interesting route for a naturalist, especially when we bear in mind that Chachapoyas is the home of *Loddigesia mirabilis*!

33. '*Log-letters from the Challenger.*'

[Log-letters from the 'Challenger.' By Lord George Campbell. 1 vol. 8vo, 1876. London: Macmillan and Co.]

So far as regards science the author of these letters would not seem to be a very promising son of his respected father; but he has written a very pleasant and readable book, which, as the first published narrative of the doings of the greatest scientific expedition of the period, will command the attention of naturalists. The account of the Penguin-rookeries and other sea-birds' breeding-peculiarities at Nightingale Island (p. 60), Marion Island (p. 76), Kerguelen Land (p. 83), and Heard Island (p. 96), will specially interest the ornithologist. Admiralty Island was perhaps the least-known place visited, and produces "Nutmeg-Pigeons" (*Carpophagæ*) in great abundance, besides other birds, of which we shall doubtless have a correct account in due time.

34. '*The Cruise of the Challenger.*'

[The Cruise of H.M.S. 'Challenger.' Voyages over many seas, scenes in many lands. By W. J. J. Spry, R.N. 1 vol. 8vo, 1876. London: Sampson, Low, and Co.]

Mr. Spry's account of the 'Challenger's' voyage is not in our opinion so well written as that of Lord George Campbell, and contains even less of scientific details; but there are a good many well-executed illustrations, and there are many passages of interest. The abstract of the log of the voyage (pp. 385–8) will be of use for reference as to dates and localities.

35. '*Stray Feathers.*'

['Stray Feathers.' A Journal of Ornithology for India and its Dependencies. Edited by Allan Hume. 1876. Vol. iv. nos. 4, 5, 6.]

These three numbers of 'Stray Feathers,' issued in one part, conclude the fourth volume of this journal, which has certainly done much towards the advancement of our favourite science in India. The most important articles are those by Dr. Armstrong on the birds of the Irrawaddy delta, by Mr. F. Bourdillon and Mr. Hume on the birds of the Travancore hills, and Mr. Hume's account of his ornithological journey to the Laccadives and west coast. As regards the

Laccadives, which have not been previously examined, the birds and other animals obtained were exclusively common Indian species, and the general conclusion arrived at is that "the Laccadives have no distinctive fauna or flora." The following "novelties" are described:—*Estrilda burmanica* from Rangoon, *Alcippe bourdilloni* from Travancore, and *Montifringilla blanfordi* and *M. mandellii* from Sikim.

36. *Sharpe's edition of Layard's 'Birds of South Africa.'*

[The Birds of South Africa. By E. L. Layard, F.Z.S. &c. New edition, thoroughly revised and augmented, by R. Bowdler Sharpe, F.L.S., F.Z.S., &c., Senior Assistant, Zoological Department, British Museum. Part iv.]

After what has been said on the subject of antedating in 'Nature' (vol. xiv. pp. 309, 330, 351, 369, 392, 424, 474) in reference to this very work, we are certainly rather surprised that Mr. Sharpe should continue in the face of the strictures of his brother naturalists to issue another number in March 1877, dated "May 1875." It is, we suppose, the fault of the publisher, who wishes to use up his old covers; but we cannot consider the author otherwise than co-responsible.

So far as we can tell, *Saxicola shelleyi* from Victoria Falls, *S. anderssoni* from Great Namaqua Land, *Drymœca hypoxantha* from Natal, and *Acrocephalus fulvo-lateralis* from Natal are now described for the first time. But we must again repeat (*cf.* Ibis, 1875, p. 506) that the omission of all synonyms is in our opinion a very great demerit in the present edition of Mr. Layard's work, as it is only by reading the context that these and other points can be ascertained.

37. *Heuglin's 'Journey in North-eastern Africa.'*

[Reise in Nordost-Afrika. Schilderungen aus dem Gebiete der Beni-Amer und Habab, mit zoologischen Skizzen und einem Führer für Jagdreisende, von M. Th. v. Heuglin. Zwei Bände. Braunschweig, 1877.]

These volumes give an account of the late Th. v. Heuglin's last African journey. In January and February 1875 Heuglin made a short excursion along the mountainous district which borders the shores of the Red Sea between Suakim and Massowah.

In the first volume of the present work is given a narrative of the expedition, with some chapters of advice to hunters and sportsmen who may wish to resort to this easily accessible and thoroughly wild district. An excellent map is added.

The second volume is devoted to an account of the mammals and birds of the district, and forms a useful handbook for those who are acquainted with German. Of birds 416 species are enumerated. *Philothamna minor* (p. 182) and *Batis orientalis* (p. 194) are figured and described as new, we believe, for the first time, the latter having been previously referred to *Platystira pririt* and *P. senegalensis.*

38. *Elliot's Monograph of the Hornbills.*

[A Monograph of the Bucerotidæ, or Family of the Hornbills. By D. G. Elliot, F.R.S.E., F.L.S., &c. Part 1, small folio, 1877. Published by the Author.]

Mr. D. G. Elliot has commenced the issue of another of his beautifully illustrated monographs, and has chosen on this occasion the singular group of Hornbills for his subject. The six plates in the first number are excellently drawn by Keulemans, and coloured well. They represent the following species according to Mr. Elliot's nomenclature:—

Rhinoplax vigil.
Sphagolobus atratus.
Cranorrhinus waldeni.
Anorrhinus albocristatus.
Bycanistes subcylindricus.
Tockus monteiri.

We hope Mr. Elliot will not carry his subdivision of the genera of the Bucerotidæ to an extreme point, and that he will not insist on adopting more antiquated names than he can help. Does any ornithologist (unless he has just referred to Mr. Elliot's work) know what *Rhinoplax vigil* is? and must we necessarily adopt that specific name? As regards the species described and figured by T. R. Forster himself in his 'Zoologica Indica,' there can be no question; and his names have always been in use; but whether we are obliged to employ the terms assigned to the Planches Enluminées, Edwards's plates, &c. in the 'Specimen Faunulæ Indicæ' thereto appended (of which *not* Forster but Pennant is stated to be the author), is another question. *We* are of opinion that they should be left in the obscurity in which they have remained since 1781, because to resuscitate them would cause a multitude of most inconvenient changes in our nomenclature; and nomenclature is, after all, a matter of convenience, not of right! The revival of Boddaert's "Table" was a great injury to ornithological nomenclature; the revival of Pennant's 'Specimen Faunulæ Indicæ' would be another.

Mr. Elliot does not state in his text where the specimens from which the figures are taken are to be found. It is always desirable to give this information, so as to facilitate subsequent identifications.

39. *Gould's 'Birds of New Guinea.'*

[The Birds of New Guinea and the adjacent Papuan Islands, including any new Species that may be discovered in Australia. By John Gould, F.R.S. &c. Part iv. Folio, 1877. Published by the Author, 26 Charlotte Street, Bedford Square, W.C.]

Of Mr. Gould's 'Birds of New Guinea' we have spoken on former occasions (Ibis, 1876, p. 363). The number already issued this year contains figures of

Pitta novæ-guineæ.
—— rosenbergii.
Paradisea sanguinea.
—— raggiana.
Melirrhophetes leucostephes.
—— ochromelas.
Melidectes torquatus.
Melipotes gymnops.
Machærirhynchus albifrons.
—— nigripectus.
Psittacella brehmii.
Malurus alboscapulatus.
Parus arfaki.

Of great interest are the new forms of Meliphagidæ (*Melirrhophetes* and *Melidectes*) now figured for the first time from specimens furnished by Dr. Meyer. *Psittacella* is a scarce and novel form of the Psittacidæ; but is *Parus arfaki* a true *Parus*?

40. *Gould's 'Birds of Asia.'*

[The Birds of Asia. By J. Gould, F.R.S., &c. Dedicated to the Honourable East-India Company. Part xxix. Folio. London: 1877. Published by the Author, 26 Charlotte Street, Bedford Square, W.C.]

Mr. Gould's annual number of the 'Birds of Asia' gives us portraits of the following species:—

Rhodopechys sanguinea.
Erythrospiza obsoleta.
—— incarnata.
Pitta baudii.
—— gurneyi.
—— steerii.
—— ussheri.
Actenoides hombroni.
—— lindsayi.
—— concretus.
Sturnus unicolor.
—— humii.
Suthora munipurensis.

The red-stained Mountain-Finches of the genus *Erythrospiza* and its allied forms are of great interest, but have been very unnecessarily cut up into too many subdivisions. *Erythrospiza incarnata* of Severtzoff ought, it appears, to bear the specific name *mongolica* of Swinhoe. *Sturnus humii* of Mr. Gould and of Mr. Brooks (Ibis, 1876, p. 500) appears to be the species just named *S. ambiguus* by the energetic ornithologist after whom Messrs. Brooks and Gould have independently proposed to call it*. We must also remark that Mr. Gould's reasons for including *S. unicolor* in the 'Birds of Asia' are rather inconsequent.

41. *Rowley's 'Ornithological Miscellany.'*

[Ornithological Miscellany. Edited by George Dawson Rowley, M.A., F.L.S., F.Z.S., Member of the British Ornithologists' Union. Parts vii. and viii. London: 1877, Trübner and Co.]

Mr. Rowley continues to publish fresh numbers of his favourite periodical. Part vii. gives us excellent figures of *Oriolus formosus* of the Sangi Islands (we really cannot use the unnecessary generic term which Mr. Rowley gives to this true Oriole), of the nest and eggs of White's Thrush, from examples obtained by Mr. Swinhoe near Ningpo, China, and of *Pitta rosenbergi* of the Schouten Islands. Mr. Rowley also gives us, with the assistance of Dr. Meyer, an excellent article on the genus *Loriculus*, with illustrations of four of these beautiful little Parrots—*L. catamene, L. regulus, L. exilis,* and *L. stigmatus.*

In part viii. we have a continuation of the useful translation of Prejevalsky's essay upon the birds of Mongolia and

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* 'Stray Feathers,' iv. p. 512.

Eastern Tibet, and illustrations of two more beautiful Pittas—*P. cæruleitorquata* and *P. sanghirana* of the Sangir Islands, and of a rare and curious Pigeon—*Ptilopus insolitus.*

42. *Beccari's Account of the Playing-places of* Amblyornis inornata.

[Le Capanne ed i Giardini dell' *Amblyornis inornata.* Per O. Beccari. Ann. Mus. Civ. Genova, ix. p. 383.]

No more interesting chapter has been recently written in field-ornithology than Beccari's account of the wonderful constructions made by the Bower-bird of New Guinea, *Amblyornis inornata,* as observed by himself during his visit to Mount Arfak in 1875. *Amblyornis* builds for its amusement a perfect circular cabin, principally of the dry twigs of an epiphytous orchid (*Dendrobium*), measuring about a metre in diameter, and supported by a single central pillar. Before the entrance is a beautiful garden of dimensions rather greater than the cabin, made of the greenest moss, and ornamented from time to time with brilliantly coloured flowers and fruits, such as flowers of a most beautiful species of *Vaccinium.* This instinct is well known to the Malay hunters, who call the bird "Tukan kobou" or "Gardener." Had space permitted, we should have been glad to give a translation of Dr. Beccari's most interesting paper, although we cannot quite agree with some of the philosophical deductions which he appends to it.

43. *Salvadori's Recent Ornithological Papers.*

[(1) Osservazioni intorno alle specie del genere *Myristicivora,* Reichb. Ann. Mus. Civ. Genova, ix. p. 268.

(2) Intorno alle specie del genere *Talegallus,* Less. Ann. Mus. Civ. Genova, ix. p. 327.

(3) Note intorno ad alcuni uccelli durante l' esplorazione del Fiume Fly. Per L. M. D'Albertis, C.M.Z.S. Ann. Mus. Civ. Genova, x. p. 5.]

Our ever-active friend Professor Salvadori continues his papers on points connected with the ornithology of New Guinea. In the first of those now before us the specific differences of three Fruit-Pigeons of the genus *Myristicivora* (*M. bicolor, M. spilorrhoa,* and *M. melanura*), which have been recently denied by Mr. Sharpe (P. Z. S. 1875, p. 108 *et seq.*), are vindicated. In the second, two new species of *Talegallus* (*T. fuscirostris* from Southern New Guinea and the Arru Islands, and *T. arfakianus* from Mount Arfak) are described, the latter, however, being founded only on chicks. The third gives a translation with notes of D'Albertis's account of his collections on the Fly River, which we have reprinted above (p. 363 *et seq.*).

44. *Barboza du Bocage's Thirteenth List of African Birds.*

[Aves das possessões portuguezas de Africa occidental por J. V. Barboza du Bocage. (Decima terceira Lista.) Jornal de Sciencias math., phys. e nat. no. xxi. 1877.]

In this article Professor Barboza du Bocage gives a list of a collection of eighty-one specimens of birds, representing fifty-one species, recently made in Benguela by Sr. Anchieta. A new Barbet is described as *Pogonorhynchus leucogaster*. It is nearest to *P. leucocephalus*.

45. *Homeyer upon German Mammals and Birds.*

[Deutschlands Säugethiere und Vögel, ihr Nutzen und Schaden. Von E. F. v. Homeyer. In Commission bei Dr. Rey in Leipzig. 8vo, pp. 81, n. d.]

Hr. E. F. v. Homeyer, a well-known devotee to our science, gives, in the present essay, a summary of the useful and noxious qualities of the mammals and birds of the Fatherland, in relation to the question of their legislative protection, a topic, in all civilized countries, of rapidly increasing importance. It would have been well if such a carefully drawn-up series of observations had been prepared by a competent naturalist in this country before the recent Acts for the protection of such birds and waterfowl were passed. Hr. v. Homeyer states that the Starling (*Sturnus vulgaris*) is the most useful bird in Germany; and as regards that country we may well accept most of his conclusions. But when he says "*in England gibt es seit längerer Zeit keine Füchse mehr*" (!) we must come to the conclusion that he does not know much of what goes on in England. We are really afraid to translate the sentence, lest it should be thought suggestive of the horrible idea.

46. *Allen's 'Progress of Ornithology in the United States.'*

[Progress of Ornithology in the United States during the last century. By J. A. Allen. American Naturalist, vol. x. p. 536.]

This essay of Mr. Allen's gives a succinct account of the rise and progress of the study of our science in the United States from the days of Alexander Wilson (1808) to the present period, and is well worthy of the attention of all ornithologists. When Bonaparte finished his continuation of Wilson's work in 1833, about 400 species of birds had been described as appertaining to the avifauna of the United States. "At the present time the number of generally accepted species entitled to recognition as birds of that portion of North America north of Mexico is not less than six hundred and fifty, with, in addition, about one hundred and fifty commonly recognized subspecies, or about eight hundred recognized forms.

"The nests, eggs, and general habits of nearly all are now well known, particularly of those which occur east of the Rocky Mountains."

"Another phase of progress," Mr. Allen observes, "that should not pass unnoticed in this connexion is the attention that has been paid to the geographical distribution of the species, with especial reference to the determination of the different faunal areas in North America, many of which are already known with a tolerable degree of definiteness, also the tendency to study the various subspecific and specific forms from a geographical and evolutionary standpoint. Formerly the study of our birds was pursued wholly analytically, and forms from distant, little-known localities which differed slightly from their near affines of neighbouring regions, were looked upon as distinct 'species.' Later, as the material for a better knowledge of the subject accumulated, specimens of an intermediate character came to light, which, so long as they were few, were naturally looked upon as probably hybrids between the forms whose characters they seemed to combine. Still later, however, it was found that certain strains of deviation from pronounced types occurred in a large number of species belonging to widely different families inhabiting the same areas. This led to the discovery of laws of geographical variation, connecting particular phases of local differentiation with the topographical and climatic peculiarities of the regions where they so uniformly occur. Many of the isolated facts bearing on this subject had been observed and placed on record prior even to 1860; but their full import was not realized till after the lapse of another decade, during which our stores of material had become vastly increased. In 1871 the 'new departure' was for the first time fairly entered upon, which in three years revolutionized the nomenclature of North-American ornithology, adding an important chapter on philosophical zoology, and exerting great influence in many other departments of North-American zoology. Naturally a view that threatened either to assign fully one sixth of the previously recognized species to the limbo of synonymy, or to lower them to the grade of geographical races, was not rashly espoused by those to whom belonged the credit of the recognition and description of these previously supposed specific forms; but so overwhelming were the facts in its favour found to be, that one after another of our leading writers soon gave it their endorsement, so that probably a greater degree of unanimity of opinion respecting any problem in ornithology never obtained than now exists among our ornithologists respecting the subject of geographical variation among our birds, and the subspecific relationship of many forms which, when first made known, seemed unquestionably of specific rank.

"The next step, and apparently a wholly logical one in the revolution, will doubtless be the general adoption of a trinomial system of nomenclature for the more convenient expression of the relationship of what are conventionally termed 'subspecific,' so that we may write, for instance, *Falco communis anatum* in place of the more cumbersome *Falco communis*, subsp. *anatum*. This system is already, in fact, to some extent in use here, though looked upon with strong disfavour by our transatlantic fellow-workers, who seem as yet not fully to understand the nature of the recent rapid advance ornithology has made in this country, or to appreciate the thoroughly substantial character of the evidence on which it is based.

"The constant and energetic exploration of the great North and North-west, of the vast trans-Mississippian region, and of our subtropical borders, during the last two decades, by scores of indefatigable collectors and observers, has certainly not been in vain, as witness the hundreds and often thousands of specimens of single species, representing the gradually varying phases presented at hundreds of localities, that have passed through the hands of our specialists."

47. *Pelzeln on Birds from Ecuador.*

[Ueber eine weitere Sendung von Vögeln aus Ecuador. (Verh. zool.-bot. Gesellsch. in Wien, 1876, p. 765.)]

This paper contains a short list of birds, in continuation of a previous memoir on the same subject (*op. cit.* 1874, p. 171). Several of the species mentioned do not appear to have been recorded before from Ecuador. The Humming-birds seem to have come in for a large share of the collectors' attention; and in the list of them we notice the name of the rare *Eutoxeres condaminii,* of which very few specimens have as yet reached Europe. One species is named with doubt *Steganura underwoodi*; should not this rather be called *S. melananthera,* or perhaps Mr. Gould's lately described *S. solstitialis*? The female of the latter is distinguishable by its rufous thighs. The exact locality in the Republic where these specimens were obtained is not stated.

48. *Pelzeln on Additions to the Imperial Museum at Vienna.*

[Ueber eine von Herrn Dr. Richard Ritter von Drasche dem k.k. zoologischen Hofcabinete zum Geschenk gemachte Sendung von Vögelbälgen. (Verh. zool.-bot. Gesellsch. in Wien, 1876, p. 717.)]

Unfortunately the exact origin of the ninety-seven specimens treated of in this paper was not recorded; but the greater part of them, it is stated, came from Celebes, the remainder from the Moluccas and Papuan Islands. One species (***Rectes draschii***), allied to ***R. dichrous***, is described as new; and the Pigeon recently characterized by Herr Brüggemann (Abh. Nat. Ver. z. Bremen, 1876, p. 84) as *Carpophaga pœcilorrhoa* is placed in the genus *Gymnophaps,* and a figure (plate xiii.) of it given.

49. *Pelzeln's Report on the Progress of Ornithology in* 1875.

[Bericht über die Leistungen in der Naturgeschichte der Vögel während des Jahres 1875. (Wiegm. Arch. xxxii. pp. 144–208.)]

This report upon the ornithological work of the year 1875, furnished by Herr von Pelzeln to Wiegmann's 'Archiv,' appears, like its predecessors, to be very complete, especially as regards the list of publications bearing upon the general subject. We also notice that several past omissions are now inserted; so that the report is perhaps enlarged somewhat beyond the dimensions due to the year to which it specially relates. There are a few points in the classification of the special portion which seem to us now to require some modification. The *Hirundinidæ* and the *Trochilidæ* cannot, we think, properly be allowed to continue in the positions here assigned to them. Though the *Upupidæ* have often been classed with the Passeres, and even placed near the Larks by Sundevall, their retention in that Order cannot be seriously maintained; still less the junction of the *Bucerotidæ* with the Passeres Conirostres. Is it not time, too, to remove the Struthiones from the midst of the Carinatæ? In a work like the present it would be unwise to adopt every new point in classification as it appears to be made out; at the same time we venture to suggest that some modification is occasionally necessary to avoid the prolonged retention of an obsolete system.

50. *Baird's 'Ornithology of Utah.'*

[Exploration across the great Basin of Utah. Appendix K, pp. 373–381. Ornithology. A List of Birds. By Prof. Spencer F. Baird. 4to. Washington: 1876.]

This is a list of the birds obtained during an exploration of the great basin of Utah, as long ago as 1859, by the engineering department of the United-States army, in charge of Captain J. H. Simpson. The whole collection consisted of 258 specimens, comprising 114 species. These have been classified by Prof. Baird according to the system prevailing in the United States, the locality of each specimen being given. None of the species appears to call for any special comment; but the list adds to our knowledge of the distribution of North-American birds, a subject which our Transatlantic brethren have long laboured at with great industry and success.

51. *Major Godwin-Austen's List of Birds from the Hills of the North-east Frontier of India.*

[Fifth List of Birds from the Hill Ranges of the North-east Frontier of India. By Major H. H. Godwin-Austen, F.R.G.S. &c. (J. A. S. B. xlv. pt. 2, p. 191.)]

A list of the birds collected by officers of the Topographical Survey of India in the Munipur and Nágá hills, and by Major Godwin-Austen himself in the Khási hills, is given in this paper, which adds another to the useful series of memoirs Major Godwin-Austen has published on the birds of these remote districts. Most of the new species obtained during these expeditions have already been described in this Journal (Ibis, 1875, p. 250 *et seqq.*) and elsewhere; but others are characterized in this article. Thus we have a new *Alcippe* from the Nágá hills allied to *A. hueti* of Père David, and called *A. fusca*, and *Neornis albiventris*, a new Warbler from the Munipur valley, allied to *N. assimilis*, Hodgs. Three species are figured (plates v., vi., vii.), viz. *Acridotheres albocincta*, *Sphenocichla roberti*, and *Pyctorhis altirostris*.

XXXIII.—*Letters, Announcements, &c.*

The following letters, addressed "To the Editors of 'The Ibis,'" have been received:—

Sirs,—In 1875 the Asiatic Society of Bengal did me the honour of intrusting to me the task of editing the posthumous Catalogue of the Birds of Burma written by Mr. Blyth. While in no degree underrating the responsibility of the duty I was asked to perform, I accepted the trust with some confidence, because Mr. Blyth, not very long before his lamented death, had gone through all his manuscript with me at Chislehurst, and, while inviting the freest criticism, only made such alterations as he was satisfied in his mind were well founded. It is needless to say that I had but few corrections to suggest, and that Mr. Blyth exhibited all that accuracy, acuteness, and retentive power of memory for which he was so remarkable. In the Catalogue as it now appears in the Journal of the Asiatic Society of Bengal, all the additions or observations made by me are enclosed in brackets, as stated by Mr. Grote in his introduction.

On page 114, at no. 359, it will be found that Mr. Blyth identified *Pellorneum subochraceum,* Swinhoe, with his own species, *Pellorneum tickelli,* Blyth. Knowing that Mr. Blyth would not hazard such an identification without good grounds, and as I had never seen the type of *P. tickelli,* Blyth, I felt bound, as his editor, to accept Mr. Blyth's views concerning his own species; and I therefore allowed the synonymy, as set forth by Mr. Blyth, to stand without alteration or remark. I felt that it would be somewhat presumptuous in me, without the type specimen in my own hand, to assume that Mr. Blyth did not know a species described by himself. I consequently accepted the title *P. subochraceum,* Swinhoe, it being of more recent date, as a synonym of *P. tickelli,* Blyth.

In 1873 Mr. Hume described (Str. F. i. p. 298) a species of *Pellorneum* from Thayetmyo under the title of *P. minor.* This is undoubtedly the same bird as *P. subochraceum,* Swinhoe (Ann. N. H. ser. 4, 1871, vii. p. 257). In the Catalogue, no. 360, I therefore remarked that *P. minor,* Hume, was "a synonym of *P. tickelli,*" accepting that title on Mr. Blyth's authority as being equal, though older, to *P. subochraceum.* That *P. minor,* Hume, was not a distinct species (I happened to possess a large series collected by Lieutenant W. Ramsay), that it had been described two years previously by Mr. Swinhoe, was, while not a matter of great surprise, beyond all doubt when I wrote. But Mr. Oates has recently (Str. F. 1876, p. 406) endeavoured to show that I, not Mr. Blyth, have "made a strange mistake" in identifying *P. tickelli* with *P. minor,* or, in other words, with *P. subochraceum.* I do not admit that Mr. Blyth was wrong in his identification of *P.*

subochraceum with *P. tickelli*; for, with the greatest respect to the superior knowledge of Mr. Oates, I am inclined (perhaps from mere editorial partiality) to believe that Mr. Blyth was as likely to know as much, I will not say more, about the specimen and species he himself had described, than even Mr. Oates, who had never seen it. But if there is an error on my part in referring *P. minor*, Hume, through *P. subochraceum*, Swinhoe, to *P. tickelli*, Blyth, it must be Mr. Blyth's "dictum," and not mine, "that will not be readily accepted by those who are conversant with local Indian ornithology."

Mr. Oates speaks confidently of having seen and shot *P. tickelli*, Blyth, on the Pegu hills. Mr. Hume, in his "List of the Birds of Upper Pegu" (*op. cit.* 1875, p. 119), goes no further than to "suppose" that the only specimen sent to him by Mr. Oates belongs to *P. tickelli*; and Mr. Oates (*l. c.*) remarks that that "specimen agrees pretty well with Blyth's meagre description." But when it becomes an object to impress on the readers of 'Stray Feathers' that I, in my capacity of Mr. Blyth's editor, have arrived "at hasty and, in many cases, erroneous conclusions," then the fact that it was Mr. Blyth, and not I, who identified his own species with one that is notoriously the same as *P. minor*, is omitted, Mr. Hume's bare "supposition" becomes a demonstrated fact, and "Blyth's meagre description," with which Mr. Oates's solitary specimen only "agrees pretty well," is considered, along with Tickell's (which is as meagre, and was also before Mr. Oates), "to give us all the really essential particulars of the plumage."

But, Sir, what will probably more interest you and your readers is, whether I was justified in treating the title of *P. minor*, Hume (lege *minus*), as a synonym of some previously described species. Upon this point there is no doubt; for I have taken the trouble to again examine the type of *P. subochraceum*.

I remain, yours,
TWEEDDALE.

Chislehurst, April 26, 1877.

Sirs,—In my additional notes to Mr. Blyth's "Catalogue of the Birds of Burma," when dealing with *Otothrix hodgsoni,* I gave a bare list of all the species of the genus *Batrachostomus* then known to inhabit the Indian region, and their synonymy. With regard to two species I simply wrote "no. 2. *B. affinis,* Blyth,=*P. parvulus,* Tem.,=*B. castaneus,* Hume.," and "no. 3. *B. moniliger,* Layard,=*B. punctatus,* Hume." For these identifications of two of Mr. Hume's new (?) species "the editor of the ornithological part" (*sic*) "of Blyth's Birds of Burma" (Str. F. iv. p. 376) has been assailed by Mr. Hume with a fretful levity and poverty of analytical perception which would have rendered it unnecessary for me to notice his remarks, had not Mr. Blanford addressed you a letter on the subject, published in the April number of 'The Ibis' (*anteà,* p. 249); for it need hardly be said that I receive opinions formed by Mr. Blanford on ornithological questions with the respect that those who know him personally or through his writings cannot fail to entertain.

The general conclusions I had arrived at (*l. c.*) were formed after repeated and anxious study of a comprehensive series of specimens and of the literature on the subject. But Mr. Blanford, I observe, makes a statement so diametrically at variance with one of my principal conclusions that, if it can be established*, my assertion (*l. c.*) that *B. castaneus,* Hume, =*B. affinis,* Blyth, must be erroneous. Its accuracy or inaccuracy turns on the fundamental question, What is *B. affinis,* Blyth? Mr. Blanford asserts that "conspicuous white spots" "occur on the wing-coverts of *B. affinis*" (*l. c.*), and that the "feathers of the breast and abdomen are pale isabelline, with rufous edges, which are broader on the breast," but that "in *B. castaneus* the greater portion of the lower surface is the same colour as the back, chestnut; but many feathers on the throat, breast, and upper abdomen are white, with black margins." Now, on the other hand, Blyth distinctly stated, in his original description of *B. affinis* (J. A. S. B. 1847, p. 1180), that it "has no white spots on the wing," that the "throat and breast" are "plain rufous, with a few white feathers, having a subterminal dusky border on the fore neck and sides of the breast." Mr. Blyth introduces *B. affinis* as being "very similar to *B. javensis* in the plumage figured by Horsfield" (Zool. Res. Java, t. 37)—that is, with unspotted wings—but "smaller." Again, two years later (*op. cit.* 1849, p. 807), Mr. Blyth, when detailing the characters which distinguish *B. moniliger,* Layard, from *P. javensis,* Horsf. apud Blyth (nec Horsf., sed =*P. stellatus,* Gould,=*B. stictopterus,* Cab.), and from *B. affinis,* remarks:—"the bright white spots on the wings" (of *B. moniliger*) "distinguish it as readily from *B. affinis.*" Indeed it is the uniform chestnut-coloured unspotted wing which at once distinguishes *B. affinis,* Blyth (when in rufous plumage), from both *B. moniliger,* Layard, ex Ceylon, and *B. javensis,* Horsf. apud Blyth, ex Malacca, nec Horsf. It is essential to the argument to bear in mind that the larger of the two Malaccan forms (I am excluding *B. auritus*) is the bird always referred to as *B. javensis,* Horsf., by Blyth, except where he quotes Horsfield's plate (Zool. Res. Java), and that Blyth, like every one else, until Dr. Cabanis descriminated and clearly described the Malaccan species (for Mr. Gould's diagnosis is too vague, and he gave Java as the habitat), assumed the latter to belong to the same species as the Javan bird. The Malaccan bird, *B. stellatus*=*B. stictopterus,* has spotted wing-coverts in both its rufous and brown phases of plumage (♀ ♂ ?); and from Mr. Blanford's clear descriptive remarks, it is evidently the species identified by him in Mr. Hume's museum as belonging to *B. affinis,* Blyth. It is a bird of which examples occur in almost every Malaccan collection of any importance, either in the bright rufous or in the brown phase of plumage, while *B. affinis* does not appear to be so common. The difference in the width of the gape noted by Mr. Blanford is just the difference observable between the gape of *P. javensis,* apud Blyth, ex Malacca (=*P. stellatus,* Gould), and *B. affinis,* Blyth.

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* [Since this letter has been in type we have received a letter from Mr. Blanford requesting that his former letter (already published in our last number, p. 249) should be cancelled. He has "looked at one of Blyth's types of *Batrachostomus,* and found that Lord Tweeddale is right and Mr. Hume wrong!"—Edd.]

Mr. Blanford inadvertently makes a slip when he states (p. 253) that "the fragments of two specimens of *Batrachostomus,* from Darjeeling, briefly described by Mr. Blyth in 1849 (J. A. S. B. xviii. p. 806), were at first referred by him to *B. affinis* ; but subsequently, in his 'Catalogue of the Birds in the Museum of the Asiatic Society,' p. 31, he ascribed them to 'a nearly allied but distinct species.'" The facts are exactly the reverse. Mr. Blyth announced the receipt of the fragments from Darjeeling and his opinion, above quoted, *first,* and not "subsequently," in the Catalogue. Afterwards, in his "Supplemental note to the Catalogue of the Birds in the Asiatic Society's Museum" (J. A. S. B. 1849, p. 806. no. 405, paper quoted by Mr. Blanford), no. 405, being the number under which *B. affinis* stands in the 'Catalogue,' Mr. Blyth published his matured opinion along with a description of the two specimens. His words are, "two specimens of what we now consider to be the young of this species" (*B. affinis*). If this were not a slip, Mr. Blanford's version would deprive me of the support of one of the many facts which led me to the inference that *B. castaneus,* Hume, = *B. affinis,* Blyth. Mr. Blyth's last-published opinion about *B. affinis* is contained in a footnote to page 83 (B. Burma), where he alludes to *B. affinis* being "probably *Otothrix hodgsoni,* G. R. Gray, if the two really differ." Malaccan examples of *B. affinis,* in grey and brown spotted dress, are difficult to distinguish from the type of *O. hodgsoni* ; but I did not venture to identify (B. Burma, no. 162) Gray's species with *B. affinis* and *B. castaneus* in the face of Mr. Hume's positive statement (Str. F. ii. p. 349) that "Mr. Hodgson's bird" (type of *O. hodgsoni*) "was certainly an adult female by dissection ;" for Lieutenant W. Ramsay (B. Burma, no. 162) had determined by dissection that the sex of a species of *Batrachostomus,* ex Burma, hardly differing from *O. hodgsoni,* was a male. This statement Mr. Hume has now reduced to "It is true, when I formerly wrote, I thought it (relying upon what Hodgson recorded) probable that *hodgsoni* was the female" (Str. F. iv. p. 378). The certainty of the fact arrived at by Mr. Hodgson after dissection, as first stated by Mr. Hume, being thus minimized to only a probability, and in the absence of the exact words used by Mr. Hodgson when recording the fact of having dissected the bird (if any such exist), there need be little hesitation in now reframing the synonymy of the species thus :— *B. affinis,* Blyth, = *Podargus parvulus,* Temm., = *Otothrix hodgsoni,* G. R. Gray, = *B. castaneus,* Hume.

But the key-stone of Mr. Blanford's contention is the statement that the three specimens in Mr. Hume's collection, of what Mr. Blanford identifies with *B. affinis* (but which I venture to contend are *B. javensis,* apud Blyth, = *B. stellatus* = *B. stictopterus*) "have been compared with Blyth's original type in Calcutta." I do not quite gather whether Mr. Blanford himself personally compared Mr. Hume's three specimens with the type of *B. affinis,* or whether Mr. Blanford accepted the correctness of the identification at second hand. Will Mr. Blanford kindly investigate the history of the specimen he alludes to as being Mr. Blyth's type of *B. affinis*? Mr. Blyth described the species from a Malaccan skin obtained through Mr. Frith in 1847. If my own personal knowledge of *B. javensis,* apud Blyth (dating back, and continued since, some thirty years), and if the published descriptions and remarks of Mr. Blyth did not irresistibly oblige me to doubt the authenticity of the specimen Mr. Blanford (as described by him) accepts as the type of *B. affinis,* I would refrain from asking him to take the trouble of re-examining it. If it be the type specimen of *B. affinis,* what is *B. javensis,* apud Blyth, ex Malacca? for neither *B. javensis,* Horsf., nor its ally, *Podargus cornutus,* Temm., occur in Malacca, so far as is at present known.

Mr. Blanford further states his opinion that *B. punctatus,* Hume, is distinct from *B. moniliger,* Layard. Specimens of a species of *Batrachostomus,* from Travancore, are identified by Mr. Hume with *B. moniliger,* a species described from a Ceylon example, while *B. punctatus,* Hume, ex Ceylon, is assumed not to belong to *B. moniliger,* but to be a new species. Four phases of *B. moniliger* are represented in my series of *Batrachostomi* ex Ceylon; and one of the phases, that assumed by the almost adult male, agrees, feather for feather, with Mr. Hume's detailed description. Mr. Hume's single example and type was obtained from Mr. H. Nevill; so were some of my specimens, and another from Malabar is in the British Museum. Yet Mr. Hume remarks, "I do not think that the learned editor in question should have so positively asserted what he had no means of verifying" (Str. F. 1876, p. 377). If Mr. Bourdillon's Travancore examples specifically differ from the Ceylon *B. moniliger*, they, not the Ceylon bird, require a new title; but the male, as described by Mr. Hume, but slightly differs from a Ceylon male of *B. moniliger* in my collection. I trust, Sir, whether my argument appears to you convincing or not, that it will enable my fellow Members of the B. O. U., and whose favourable opinion I prize, to judge of the scientific value of the criticism contained in the following reckless passage Mr. Hume has ventured to print (*l. c.*):—"It does seem a pity that such very erroneous assertions [that *B. castaneus*=*B. affinis*, and that *B. punctatus*=*B. moniliger*] "should be put forward so authoritatively without the remotest apparent grounds." Is it uncharitable to suggest that "grounds" which may not be apparent to Mr. Hume may yet be self-evident to any ornithologist who takes the trouble to acquire the rudiments of the subject on which he professes to instruct others?

I remain yours,

Chislehurst, May 16, 1877. TWEEDDALE.

P.S. Mr. Blanford (*l. c.*) mentions a specimen of an adult (*B.* sp.) in Mr. Hume's possession, ex Sikim, "closely agreeing in general coloration with the figure of *Otothrix hodgsoni*," as being "marked female." Is this the same example alluded to by Mr. Hume (*op. cit.* ii. p. 349), the only one of his four "noted as a female, with a note of interrogation," by its collector, Mr. W. Mason? If it is not, we have some evidence of dimorphism in *B. affinis*. If it be the same individual, the note of interrogation must have escaped Mr. Blanford's attention.—T.

SIRS,—Mr. W. R. S. Ralston has kindly called my attention to an account of the Petchora expedition of our friends Messrs. Seebohm and Harvie Brown which lately appeared in the correspondence of the 'Novoe Vremya' or 'New Times' of St. Petersburg; and I think a few extracts, translated by Mr. F. C. Craemers, will amuse and interest stay-at-home members of the B. O. U. After alluding to one or two former travellers, the writer comes to "Messrs. John Brown & Co.," of whom he reports as follows:—

"The principal object of the foreigners appears to have been the formation of a large collection of skins of all species of Birds and Mammals, and also to obtain a large series of eggs. They showed such great carefulness in their work that they minutely examined the smallest differences between specimens of one and the same species, and used every endeavour to obtain examples of all the species and varieties . . . . The inquisitive and *naïve* Petchora people relate that before shooting a bird, the English travellers carefully examined it through a telescope or some other optical instrument, then they fired. They spent several months in the Petchora country, and were evidently satisfied with their expedition, having obtained nearly 1000 specimens of birds and beasts and also a great number of eggs—very solid material for a scientific zoologist. They also discovered a new species of bird (belonging, if I mistake not, to the Sandpiper tribe), which according to them, does not occur in Europe or America, rich as they are in animal life.

"Judging from the statements of the people, these foreigners seem to have made a very favourable impression by their liberal payment for specimens collected for them, and by the good works in which they appear to have distinguished themselves. It is said that they had a travelling medicine-chest with them, with which they willingly and gratuitously cured the sick; and so earnest were they in this, that whenever they heard of any one being ill they hastened to render medical aid, unmindful of either time or weather."

It is very satisfactory to find that the good name of the brotherhood was so well supported by "John Brown & Co.;" but the writer goes on to regret that the investigation of the country should be left to strangers. He points out that the trade and produce of the western parts of the Government of Archangel is already mainly in foreign hands; and, fearing a similar result in the north-east, he concludes:—

"All these expeditions and explorations of natural resources are not without a purpose! In 1873, the Petchora was visited by Austrian travellers under Wilchek, in 1875–6 by the English zoologists; and now the advent of the English merchants Bell and Gardins is expected, arising solely from John Brown & Co.'s expedition . . . . . Why do Russian naturalists not care for the Petchora? So many foreigners—scientific men and merchants—visit the country, and no Russians; it is strange!"

The discovery of *Anthus gustavi* and *Phylloscopus tristis* in the Petchora country is of course quite sufficient to account for this impending rush of British traders.

I am, &c.,
Edward R. Alston.

London, May 26, 1877.

Sir,—I send you the following notes, trusting they will interest the readers of 'The Ibis.'

I have recently received from a gentleman temporarily stationed in the mountains of upper Colorado the very interesting nest and eggs of *Dendrœca auduboni*. It is only the second nest of this bird of which any record has been made, and differs from the first in many respects: it also shows the most eastern and southern point to which the bird has been traced in the breeding-season. The nest was taken and the parentage of the eggs identified by Mr. Edward Carter, a gentleman investigating the ornithology of upper Colorado, near Breckenridge Pass in Summit County.

The two eggs I have, from a set of five, are said to represent the extremes in their markings. They are, however, very much alike. Their ground-colour is a very light green or greenish white. One is spotted and blotched, only about the larger end, with a wreath of mingled shadings of very light lilac, purple, and brown, the extreme ends having a circle nearly bare of spots; a waving line of umber, almost black in its integrity, extends almost entirely round the egg, just within the corona; and there are a few minute dots of the same. The other egg has a similar crown, but none of the umber lines or dots, but has a few light-lilac dots scattered over the rest of its surface. They are of a rounded oval shape, and measure ·70 by ·58 of an inch.

The nest was in a grove of pines bordering the river-bottom, and well concealed in the fork of a horizontal limb, and about eight feet from the ground. No description can do justice to the elaboration and artistic elegance of its construction. It is large for the bird, being 3½ inches high by 2¾ wide; and the hollow is 2 inches deep by 2¼ wide, the walls varying from ½ to 1½ inch in thickness. The framework is beautifully wrought of fine vegetable stems and roots, into which are woven the feathers of various birds, those of the winter plumage of *Lagopus leucurus* being most conspicuous, and in strong contrast with the sooty feathers of the *Calamospiza bicolor*.

Neither its eggs nor its nest have any resemblance to those of *D. coronata,* as one would naturally expect to see. Mr. Hepburn found a single nest built in the forked branches of a small shrub; but he states that they generally frequent high trees and construct their nests in the upper branches.

The bird is very abundant in Montana, in Washington Territory, and parts of Oregon; Dr. Cooper thinks they breed in the higher Sierra-Nevada, and, Dr. Coues also believes, as far south as the mountains of Arizona.

In the absence of large blotches scattered over the egg generally, in the paleness of its marking, and in the general lightness of its coloring, this egg bears no resemblance to the egg of any other species of this genus that I have ever met with.

I am yours &c.,
T. M. Brewer.

Boston, U. S.
April 27, 1877.

Sir,—Mr. Yarrell, in his 'British Birds' (1st ed.), writing of the Long-tailed Duck, says that in the male bird there are "four window-like apertures" at the bottom of the trachea; but in his vignettes five are represented (B. B. iii. p. 261);

and in several specimens prepared by me there have been five. Five must therefore be considered the normal number. Comparing his vignettes of the tracheal enlargements in the Duck-tribe with the specimens which I have prepared, I have only in a few instances found mine to differ from his. Perhaps the most difference I have observed is in the Shelduck, the lobes in mine being a good deal larger than they were apparently in his; but it is possible that his picture may have been purposely done on a small scale.

In allied species of Ducks, where the outward marks of shape and colour conform, one would naturally expect a conformity of trachea; but any naturalist who has dissected birds can at once lay his hand on a remarkable exception.

The Garganey and Teal are very near cousins; but the Garganey's windpipe in no way resembles a Teal's; it is vastly larger in the labyrinth. In a specimen now before me this labyrinth, or cartilaginous box, if one may so term it, measures 2½ inches in circumference, whereas in a Teal the same part measures only 1¼ inch; yet neither of these specimens was selected as being unusually large or small.

J. H. Gurney, Jun.,

Northrepps Cottage, Norwich.
May 12, 1877.

Sirs,—A few months ago I had an opportunity of examining a large collection of *Phylloscopi* which had been lent to my friend Mr. Seebohm by different collectors. One bird in particular attracted my attention.

It belonged to the collection of Von Homeyer, and was labelled "*Phylloscopus middendorffi* ♂ juv., Tjabuk, 16th August 1872:" on the back of the label was, "Ural, No. 9."

I found it to be, beyond all doubt, *Phylloscopus viridanus* of Blyth in its first plumage, before the slight wing-bar loses its colour and becomes whitish. Two of my examples that I had with me, early autumn birds, matched it most perfectly.

The southern part of the Ural Mountains is in Russia in Europe, and does not, like the northern portion, form the boundary between Europe and Asia; and this being the case, Tjabuk must be in Europe. It must be a little-known place; for none of the maps that I have seen show it. In Mr. Dresser's 'Birds of Europe,' part 38, and under the head of *Hypolais caligata*, I find the place referred to as being in the South-eastern Ural.

I think the species ought to be added to the European list.

An addition may be also made to the Asiatic list; for I have seen an example of *Acrocephalus turdoides* obtained by Capt. Henry St. John, R.N., in China.

The length of its wing is 3·65. The wing of *A. orientalis* is generally about 3·25 inches long.

The form of the wing of the Chinese example above referred to agrees perfectly with that of an Astracan example I have, the second primary being almost as long as the third (which is the longest) and much longer than the fourth. In the allied Eastern species *A. stentorius* (*A. brunnescens*), the second primary is about the same length as the fifth, and is often between the fifth and sixth.

It would be impossible to separate undersized examples of *A. turdoides* from large ones of *A. orientalis* by appearance only. There may be differences of voice, song, nest, and eggs; but of these I have not any knowledge.

The nest of *A. stentorius* is a deep cup, substantially built of grass and long leaves of water-plants, and is firmly attached to a few reeds, like the nest of *A. streperus*. It is generally placed about eighteen inches above the surface of the water. The eggs are very similar to those of its European ally. It breeds plentifully around the lakes of Cashmere, where I found several nests. I did not see any other Reed-Warbler about these lakes.

Yours &c.,
W. Edwin Brooks.

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29 May, 1877.

Sirs,—Having recently had an opportunity of inspecting, in the Gardens of the Zoological Society, the interesting Falcon taken off Socotra (mentioned *anteà*, p. 149) I trouble you with the following remarks respecting it.

The bird is still in immature plumage; and until after its next moult it will, I think, be impossible to determine (except by dissection in case of death) whether it is a male of *Falco peregrinus* or a female of either *F. barbarus* or *F. minor*; but I am decidedly of opinion that it is not an example of *F. peregrinator,* as that species, when in immature dress, always has, so far as I have observed, the longitudinal dark marks on the breast and abdomen narrower than they are in this specimen, and the paler interspaces decidedly tinged with rufous.

I am, &c.,

J. H. GURNEY.

SIRS,—In the last number of 'The Ibis' (*anteà,* p. 164) Mr. Seebohm gives a detailed description of the rufous-tailed Shrike, which has been shot on Heligoland. After having examined the specimen and collated with other skins, he says, "I submit that the Heligoland bird is *Lanius isabellinus,* Hempr. & Ehr. (1828),=*L. arenarius,* Blyth (1846),=*L. phœnicuroides,* Sev. (1876)."

I have not had the pleasure of examining this Heligoland Shrike; but I have received, by the kindness of Mr. Gaetke, a longer description, which I have published (Journ. für Ornithologie, 1875), and from which I suppose the bird not to be *Lanius phœnicurus,* Pall., but a nearly allied species, probably *L. phœnicuroides* of Severtzoff. In identifying the Heligoland Shrike with *L. isabellinus,* Hempr. & Ehr., Mr. Seebohm is perhaps right; but in identifying this last-named bird with *L. phœnicuroides,* Sev., he is not right. These two Shrikes are nearly allied, but not the same. In a little account of the genus *Otomela,* Bp. (Journ. für Ornithologie, 1875), I have referred to the specific differences between these rufous-tailed Shrikes. The examination of the large series of *L. isabellinus* and *L. phœnicuroides* which Mr. Modest Bogdanow has collected in Turkestan has confirmed my opinion.

I am, &c.,

H. SCHALOW.

Berlin, N., Nieder-Schönhausen,
6th June, 1877.

Sirs,—Mr. Gould, in part xxix. of 'The Birds of Asia,' treating of *Sturnus unicolor,* quotes from part xxvi. of Dresser's work 'The Birds of Europe' a passage where it is said that *Sturnus unicolor* is "common in Italy." This is not exactly the case; and I suppose that Dresser, by a *lapsus calami,* wrote "Italy" instead of "Sardinia." When I wrote my work on the Birds of Italy I did not know of any instance of *S. unicolor* having been met with in the Italian peninsula; but since then I heard from my friend the Marquis G. Doria, of Genoa, that in 1867 two specimens of it, caught near Genoa, had come into his hands. In any case the appearance of *S. unicolor* in Italy is quite accidental, while both in Sardinia and in Sicily *S. unicolor* is a common and stationary bird.

I am, yours &c.,
T. Salvadori.

Zoological Museum,
Turin, June 8th, 1877.

Roraima and its Mysteries.—The 'Spectator' speaks very appositely of Roraima, in noticing Mr. Brown's recent work (see *anteà,* p. 239):—

"One of the greatest marvels and mysteries of the earth lies on the outskirt of one of our own colonies; and we leave the mystery unsolved, the marvel uncared for! A great table of pink and white and red sandstone, 'interbedded with red shale,' rises from a height of 5100 feet above the level of the sea, 2000 feet sheer into the sapphire tropical sky. A forest crowns it; the highest waterfall in the world tumbles from its summit, 2000 feet at one leap. As far as I can make out, only two parties of civilized explorers have touched the base of the table—Sir Robert Schomburgk many years ago, Mr. Brown and a companion in 1869—each at different spots. Mr. Brown cannot help speculating whether the remains of a former creation may not be found at the top. At any rate, there is the forest on the summit. Of what trees is it composed? They cannot well be the same as those at the base . . . . For millenniums this island of sandstone must have had its own distinct flora. What may be its fauna? Very few birds probably ascend to a height of 2000 feet in the air, the vulture tribe excepted. Nearly the whole of its animated inhabitants are likely to be as distinct as its plants. Is it peopled with human beings? Who can tell? Why not? The summit, Mr. Brown says, is inaccessible, except by means of balloons. Well, that is a question to be settled on the spot between an engineer and a first-rate 'Alpine' . . . . . But put it that a balloon is required, surely it would be worth while for one of our scientific societies to organize a balloon expedition for the purpose. No one can tell what problems in natural science might not be elucidated. We have here an area of limited extent, within which the secular variation of species by natural selection, if any, must have gone on undisturbed since, at least, the very beginning of the present age in the world's life. Can there be a fairer field for the testing of those theories which are occupying men's minds so much in our days?"

We hear with great pleasure that a young ornithologist, already known to fame (Mr. Everard F. im Thurn), has received the appointment of Director of the Natural-History Museum at Georgetown, Demerara, with liberty to travel and explore for a certain portion of the year. We trust he will turn his attention to the mysteries of Roraima.

Translation of Müller's Memoir on the Voice-organ of the Passeres.—We are glad to be able to announce the approaching publication, by the Delegates of the Oxford University Press, of a translation, by Mr. Bell, of Müller's Classical Essay upon the organs of voice of the Passeres. Prof. Garrod has undertaken to supply a series of notes to bring the work up to the level of our present knowledge of this important subject. The Academy of Berlin has most liberally granted the use of the original copper-plates, to which, however, we believe, additions will be made.

THE IBIS.

FOURTH SERIES.

No. IV. OCTOBER 1877.

XXXIV.—*List of Birds observed in Smith Sound and in the Polar Basin during the Arctic Expedition of* 1875–76. By H. W. Feilden.

In the following notes I have confined myself to an enumeration of the various species of birds met with by the recent Arctic Expedition in Smith Sound and northward, between the seventy-eighth and eighty-third degrees of north latitude. All of the birds noted are well-known arctic forms; and the chief interest lies in the record of their great northern extension in the western hemisphere. The only other part of the globe lying within nearly the same parallels of latitude with which we are well acquainted is Spitsbergen; and though that group of islands has been frequently visited by accomplished and painstaking naturalists, yet the number of species of birds, including stragglers, at present known to have occurred there is under thirty. Were I to include in this list species recorded by Dr. Bessels * from Thank-God Harbour, not met with by me, the list of the avifauna of Smith Sound and Spitsbergen would be about numerically equal, thus according, as far as numbers are concerned, with the opinion published before the Expedition left England by one of the most distinguished members of our Society*; and, except amongst those sanguine persons who may still cling to a belief in the existence of an "open polar sea," I think it is impossible to doubt that, both specifically and numerically, bird-life must rapidly decrease with every degree of northern latitude after passing the eighty-second parallel. If, however, there be an extension of land to the northernmost part of our globe, I see no reason why a few species of birds should not resort there to breed; and those most likely to proceed there are *Plectrophanes nivalis*, *Strepsilas interpres*, *Calidris arenaria*, *Tringa canutus*, and *Sterna macrura*. There would still be sufficient summer, if such a term may be used, for the period of incubation; and from what I have seen of the transporting powers of the wind in drifting seeds over the frozen expanse of the polar sea, I cannot doubt that a scanty flora exists at the pole itself, if there be any land there, and that the abundance of insect-life which exists as high as the eighty-third degree will be present at the ninetieth, sufficient to provide for a few Knots, Sanderlings, and Turnstones. The arctic sea at the most northern point reached abounds with Amphipoda, such as *Anonyx nugax*, which doubtless extend all through the polar sea; and these crustaceans supply *Sterna macrura* with food in those parts where the continual presence of ice prevents fish coming to the surface; for wherever there is land there must be tidal ice-cracks, which allow these minute animals to work their way up between the floes. The range of the Brent-Goose is probably coincident with the range of *Saxifraga oppositifolia*; and this plant also supplies subsistence to the Knot and Turnstone, and probably the Sanderling, before the long arctic day has awakened the insect-life.

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* Bulletin de la Société de Géographie: Paris, 1875.

Ross's Gull (*Rhodostethia rosea*) not having been met with in Smith Sound, either by our expedition or that of the 'Polaris,' its absence from Spitsbergen, Franz-Joseph Land, and, as far as we know, the northern shores of Siberia, its not having been noticed by any of our arctic or Franklin-search expeditions that entered Lancaster Sound, or skirted the northern shores of America from Behring's Straits, nor by observers in Alaska or the fur-countries, leads to the supposition that it must be a species of limited distribution, having its breeding-haunts to the north of Hudson's Bay. I would suggest that inquiries about this bird should be made among the Esquimo of Cumberland Gulf; and as it is chiefly American vessels that winter there, the Smithsonian Institution would, I think, have very little difficulty in inducing some person employed there to investigate this subject. Dr. Horner, of the yacht 'Pandora,' kindly informed me that in July 1876 he saw an example of *Saxicola œnanthe* at Port Foulke, a far more northern range of this species than had previously been recorded.

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* Newton, 'Arctic Manual,' p. 114: London, 1875.

I was much struck with the extreme shyness of all the birds we met with in the far north; and until they had settled down to nesting it was no easy matter to get within gun-shot range.

1. Falco candicans. Greenland Falcon.

The white form of Great Northern Falcon, though seen on several occasions, was not procured by us in Smith Sound. Mr. Hart noticed a pair of these birds nesting in the limestone cliffs near Cape Hayes, Grinnell Land (lat. 79° 41′ N.), but was unable to secure a specimen. From this point to our most northern extreme this Falcon was not observed by any member of the expedition. On the 24th August, 1876, near Cape Fraser (lat. 79° 47′ N.), when on our return southwards, a bird of this species flew round our vessels. The following morning, when on shore between Cape Hayes and Cape Napoleon, I saw a magnificent example of *F. candicans* seated on a rock; it permitted me to get within seventy or eighty yards; but I failed in trying to procure it.

2. Nyctea scandiaca. Snowy Owl.

This Owl is a common spring and summer migrant to the northern part of Grinnell Land. On the 2nd October, 1875, I observed an individual of this species seated on a hummock in the vicinity of our winter-quarters (lat. 82° 27′ N.). On the 29th March, 1876, an example was seen by Lieutenant

Parr some three miles north of the ship. 15th May, whilst travelling up a valley (lat. 82° 40′ N.) in Grinnell Land, our party disturbed a Snowy Owl from the ground. Subsequently this species was not unfrequently observed; a pair seemed to frequent and breed in each large valley running down to the sea-shore. On the 24th June we found a nest of these birds containing seven eggs (lat. 82° 33′ N.); the nest was a mere hollow scooped out of the earth, and situated on the summit of an eminence which rose from the centre of the valley. Several other nests were found in the vicinity of winter-quarters, and at one time there were six or seven fine young birds caged on board. In the vicinity of Discovery Bay (lat. 81° 44′ N.) this Owl bred abundantly. During the month of August, while proceeding southwards, it was no uncommon circumstance to see one or more of these birds occupying a conspicuous post on the bold headlands we were passing under. By the end of the month all had disappeared. The food of the Snowy Owl in Grinnell Land appears to consist entirely of the lemming (*Myodes torquatus*). Hundreds of their cast pellets, which I picked up and examined, consisted of the bones and fur of these little animals; and the stomachs of all I opened contained the same.

3. PLECTROPHANES NIVALIS. Snow-Bunting.

After passing the 78° of north latitude this species is not met with in the same numbers as in the neighbourhood of the Danish settlements of West Greenland, but is dispersed generally along the shores of Smith Sound and the Polar Basin. On the 28th August, 1875, at Shift-rudder Bay (lat. 81° 52′ N.), I observed a flock of about eighty, and a second, in which I counted over twenty, flying south. 14th September, Lieutenant Parr met with a solitary individual in lat. 82° 35′ N.; and the last one I observed that season flew past the ship on the 24th September.

I first heard the note of this bird when travelling, on the 13th May 1876, in lat. 82° 35′ N.; the following day I observed one; and after that day they were frequently met with. On the 27th May Lieutenant Parr, on his journey from the north over the ice, saw a Snow-Bunting near to the 83°. I found a nest of this species on the 24th June (lat. 82° 33′ N.), containing four eggs, within twenty feet of the nest of a Snowy Owl; it was neatly constructed of grasses, and lined with the Owl's feathers. On another occasion I found a nest lined with the soft wool of the musk-ox.

4. CORVUS CORAX. Raven.

A pair of these birds were observed by Dr. Coppinger to be nesting in the cliffs of Cape Lupton during the month of July. While this officer was detained at Polaris Bay by the sickness of some of the sledge-crews, he noticed these birds visit their camp daily in search of offal. The Raven was not observed by any of our expedition along the shores of the Polar Basin; so that I consider Cape Lupton (lat. 81° 44′ N.) the northernmost settlement of this species. 29th August, 1876, at Dobbin Bay (lat. 79° 36′ N.), a female, one of a pair, was shot by Dr. Moss, who enticed it within range by laying down a dead hare and concealing himself near at hand. South of Dobbin Bay I observed this species at several points in Smith Sound—namely, at Cape Hayes, Norman-Lockyer Island, and Cape Sabine.

5. LAGOPUS RUPESTRIS. Rock-Ptarmigan.

This Ptarmigan was obtained by our sledging parties as far north as 82° 46′, two or three couples having been killed in the end of May on Feilden Peninsula. Lieutenant Aldrich found traces of Ptarmigan on Cape Columbia (lat. 83° 6′ N.), the most northern land yet visited by man. On the 29th September, 1875, Captain Markham, in lat. 82° 40′ N., observed four of these birds; and the earliest date on which they were noticed in the spring of 1876 was on the 11th March.

6. STREPSILAS INTERPRES. Turnstone.

This bird is tolerably abundant in Smith Sound and the region north of it visited by the Expedition. It was observed as late as the 5th September, 1875, in lat. 82° 30′ N., and was first noticed on the 5th June, 1876, in the neighbourhood of the winter-quarters of H.M.S. 'Alert.' By the 12th August the young broods were able to fly.

7. Ægialitis hiaticula. Ringed Plover.

Only a single example of this species was observed in Smith Sound. It was obtained 4th August, 1875, on the beach bordering the valley of the Twin glacier, in Buchanan Strait (lat. 78° 48′ N.). My attention was drawn to the bird by its note; and I then observed it threading its way among the stones and stranded blocks of ice near the water's edge. It was probably nesting in the neighbourhood, as it proved on examination to be a female, with the feathers worn off the underparts from incubation.

8. Calidris arenaria. Sanderling.

I first observed this species in Grinnell Land on the 5th June, 1876, flying in company with Knots and Turnstones; at this date it was feeding, like the other Waders, on the buds of *Saxifraga oppositifolia.* This bird was by no means abundant along the coasts of Grinnell Land; but I observed several pairs in the aggregate, and found a nest of this species containing two eggs, in lat. 82° 33′ N., on 24th June, 1876. This nest, from which I killed the male bird, was placed on a gravel ridge, at an altitude of several hundred feet above the sea; and the eggs were deposited in a slight depression in the centre of a recumbent plant of arctic willow, the lining of the nest consisting of a few withered leaves and some of the last year's catkins. 8th August, 1876, along the shores of Robeson Channel, I saw several parties of young ones, three to four in number, following their parents, and led by the old birds, searching most diligently for insects. At this date they were in a very interesting stage of plumage, being just able to fly, but retaining some of the down on their feathers.

9. Phalaropus fulicarius. Grey Phalarope.

I obtained an example of this species, a female, near our winter-quarters (lat. 82° 27′ N.) on the 30th June 1876; and during the month of July I observed a pair on a small freshwater pond in lat. 82° 30′ N.; they were apparently breeding. The female of this species is larger and brighter-coloured than the male bird. Several other examples were observed in the neighbourhood of our winter-quarters by various members of the expedition.

10. Tringa canutus. Knot.

I was not so fortunate as to obtain the eggs of this species during my stay in the polar regions, though it breeds in some numbers along the shores of Smith Sound and the north coast of Grinnell Land. It appears to be common throughout the Parry Islands during summer, as Sabine found it (1820) nesting in great numbers on Melville Island. I find it enumerated in a list of birds (preserved in the archives of the Admiralty) as procured by Dr. Anderson, of H.M.S. 'Enterprise,' at Cambridge Bay (lat. 69° 10′ N.) in July 1853. On the 28th July, 1875, Dr. Coppinger came across a party of six Knots several miles inland from Port Foulke: these birds were feeding near a rill, and were very wild; but he managed to secure a single specimen, a male in full breeding-plumage. August 25, 1875, I observed several of these birds near the water-edge in Discovery Bay (lat. 81° 44′ N.). The rills and marshes were by this time frozen, and the birds were feeding along the shore on the small crustaceans so common in the arctic seas; in pursuit of their food they ran breast-high into the water. By this date they had lost their breeding-plumage. On 5th June, 1876, when camped near Knot Harbour, Grinnell Land (lat. 82° 33′ N.), we noticed the first arrival of these birds; a flock of fourteen or more were circling over a hillside, alighting on bare patches, and feeding eagerly on the buds of *Saxifraga oppositifolia*. Subsequently we met with this bird in considerable numbers; but they were always very wild and most difficult of approach. The cry of the Knot is wild, and something like that of the Curlew. Immediately after arrival in June they began to mate, and at times I noticed two or more males following a single female; at this season they soar in the air, like the common Snipe, and when descending from a height beat their wings behind the back with a rapid motion, which produces a loud whirring noise. During the month of July my companions and I often endeavoured to discover the nest of this bird; but none of us were successful; however, on the 30th July, 1876, the day before we broke out of our winter-quarters, where we had been frozen-in eleven months, three of our seamen, walking by the border of a small lake, not far from the ship, came upon an old bird accompanied by three nestlings, which they brought to me. The old bird proved to be a male; its stomach, and those of the young ones, were filled with insects. The following description of the newly hatched birds was taken down at the time:—Iris black; tip of mandibles dark brown, bill dark olive; toes black, soles of feet greenish yellow; back of legs the same; underpart of throat satin-white; back beautifully mottled tortoise-shell. Dr. Coppinger informed me that this bird was not uncommon at Thank-God Harbour during July. In the first week of August, I saw family parties of Knots at Shift-rudder Bay (lat. 81° 52′ N.); they were then in the grey autumn plumage. The Knot bred in the vicinity of Discovery Bay; but no eggs were found there, although the young were obtained in all stages of plumage.

11. STERNA MACRURA. Arctic Tern.

Is not uncommon in Smith Sound, and we found it breeding at several localities we visited on our way north. 11th August, 1875, on Norman-Lockyer Island, I noticed several pairs, and picked up a bleached egg, probably an addled one of a former season. August 21st, we found eight or ten pairs breeding on a small islet off the north end of Bellot Island (lat. 81° 44′ N.): the land at this date was covered with snow; and on the islet it lay about three inches deep. In one nest I found a newly hatched Tern; it seemed quite well and lively in its snow cradle. The parent birds had evidently thrown the snow out of the nest as it fell; for it was surrounded by a border of snow marked by the feet of the old birds, and raised at least two inches above the general level. The Terns on this islet were rather shy, none coming within range until I had handled the young one. There seemed to be abundance of fish in the pools between the floes, as the old birds were flying with them in their mandibles. The stomach of the female which I killed was empty; but that of the nestling contained remains of fish. On the 16th June, 1876, three of these birds appeared in the neighbourhood of the winter-quarters of the 'Alert.' By the end of June pairs of these birds were scattered at intervals along the coast; and a nest, scraped in the gravel and containing two eggs, was found 27th June, about three miles north of our winter-quarters. During the first week in August we found a pair of young birds nearly ready to fly in lat. 81° 50′ N.

12. Pagophila eburnea. Ivory Gull.

One of the Gulls most frequently observed in Smith Sound, but not beyond latitude 82° 20′ N. I found a pair nesting in a lofty and inaccessible cliff near Cape Hayes on the 16th August, 1875. On 1st September a single example flew around the 'Alert' when she lay moored to the ice in Lincoln Bay (lat. 82° 6′ N.). On the 2nd August, 1876, I observed one of this species near Cape Union; on the 12th August they were common in Discovery Bay, and from there southward to the north water of Baffin Bay.

13. Rissa tridactyla. Kittiwake.

I saw a few examples of this species flying over the open water in the vicinity of Port Foulke, 28th July, 1875; but we did not observe it to the northward after entering the ice of Smith Sound; and in 1876 no specimen was seen as the expedition returned south, until the north water of Baffin Bay was reached.

14. Larus glaucus. Glaucous Gull.

We did not find this species breeding north of Cape Sabine; but stray individuals were observed as far north as lat. 82° 34′. The 1st September, 1875, was the latest date in the autumn on which I noticed this species; and it reappeared in the vicinity of winter-quarters (lat. 82° 27′ N.) in the middle of June.

15. Stercorarius longicaudatus. Buffon's Skua.

This was the only species of Skua Gull that I met with in Smith Sound; it arrived in the neighbourhood of our winter-quarters during the first week of June, and in considerable numbers. After that date it was to be seen during every hour of the day quartering the fells and searching for lemmings. It lays its two eggs in a small hollow in the ground, and defends its nest with the utmost bravery. On several occasions

I have struck the old birds with my gun-barrel when warding off their attacks as I plundered their nests. This species can easily be distinguished from its near ally, *S. parasiticus*, at every age, by the mottled colour of the tarsus and webs of the feet, which in *S. parasiticus* are black.

16. PROCELLARIA GLACIALIS. Fulmar.

Common in the north water of Baffin Bay; and individuals followed our ships until we entered the pack off Cape Sabine. On the 26th June, 1876, Lieutenant Parr and I, when travelling on the coast of Grinnell Land (lat. 82° 30′ N.), observed one of these birds; and a few days later Lieutenant Egerton found one dead on the shore some two miles further to the northward. We did not observe this species again till our return to Baffin Bay in September 1876.

17. URIA GRYLLE. Black Guillemot.

The Dovekie was found breeding at various spots along the shores of Smith Sound and northward, notably at Washington-Irving Island, Dobbin Bay, Cape Hayes, and Bessels Bay; it does not, I think, breed north of Cape Union. I saw two or three examples feeding in pools on the floe as far north as lat. 82° 33′; but they were evidently mere stragglers.

18. MERGULUS ALLE. Little Auk.

The north water of Baffin Bay is the summer home of countless numbers of these birds; they do not, however, penetrate in any numbers far up Smith Sound, the most northern point where I observed them being in Buchanan Strait (lat. 79°). I do not think that they breed to the north of Foulke Fiord; but the talus at the base of the cliffs that flank that inlet is occupied by myriads of them during the nesting-season. On the 28th July, we found the young just hatched; they are in that stage covered with black down. From the large amount of bones and feathers lying around the huts of the Esquimo village of Etah, it is evident that these birds contribute largely to the support of the Arctic Highlanders during summer.

19. ALCA BRUENNICHII. Bruennich's Guillemot.

I observed two individuals of this species in August as far north as Buchanan Strait (lat. 79°); but this bird was not seen again by me until our return southward in September 1876, after regaining navigable water south of Cape Sabine. The north water of Baffin Bay is evidently the limit of the northern range of the species in that direction; and I doubt if there are any breeding-haunts of this species north of Cape Alexander.

20. COLYMBUS ———.

On the 2nd September, 1875, at Floeberg Beach (lat. 82° 27′ N.), a Diver, I think *C. septentrionalis*, alighted in a pool about a hundred yards from the ship. A boat was instantly lowered; but the noise made by pushing the boat through the young ice alarmed the bird, which rose and flew to another pool half a mile to the southward. I tried to make my way over the floe towards the bird; but the ice was unsafe, so I had to give up the pursuit. The numerous lakes and ponds in Grinnell Land abound with a species of char (*Salmo arcturus*, Günther), which doubtless might afford good living to birds of this family.

21. HARELDA GLACIALIS. Long-tailed Duck.

We observed a flock of this species swimming in the pools of water between the floes on the 1st September, 1875, near Floeberg Beach (lat. 82° 27′ N.). On the 16th September two were shot not far from the ship. During the summer of 1876 a few of these birds visited the northern shores of Grinnell Land; we found them in pairs on lakes and ponds, where they were evidently breeding. From the rapidity with which they dive they are very difficult to shoot, and when secured do not repay the outlay in powder and lead.

22. SOMATERIA MOLLISSIMA. Eider.

This species breeds in great numbers in the neighbourhood of Port Foulke, but decreased in numbers as we advanced northwards. It became rare after passing Cape Fraser, the meeting-place of the polar and Baffin-bay tides, but was replaced to some extent by the next species. I did not obtain an Eider north of Cape Union. Dr. Coppinger procured both Eider and King-Duck at Thank-God Harbour (lat. 81° 38′ N.) in the month of July, 1876.

23. Somateria spectabilis. King-Duck.

I did not obtain this bird in Smith Sound during the autumn of 1875; but in the end of June 1876 several flocks of males and females, numbering from ten to twenty individuals, were seen near Floeberg Beach (lat. 82° 27′ N.). Most of these fell a prey to our gunners; but those that escaped settled down to breed along the coast, and several nests were found with fresh eggs in them from the 9th to the middle of July.

24. Bernicla brenta. Brent-Goose.

During the first week of June, parties of these birds arrived in the vicinity of our winter-quarters (lat. 82° 27′ N.); for some days they continued flying up and down the coast-line, evidently looking out for places bare of snow to feed on. They were very wary, and kept well out of gun-shot range. On the 21st June I found the first nest with eggs, in lat. 82° 33′ N.; subsequently many were found. When the young are hatched the parent birds and broods congregate on the lakes or in open water spaces near the shore in large flocks; by the end of July the old birds were moulting and unable to fly, so that they were easily secured, and afforded most valuable change of diet to our sick. The flesh of this bird is most excellent.

The gander remains in the vicinity of the nest while the goose is sitting, and accompanies the young brood. In one instance where I killed a female as she left her nest the gander came hissing at me.

XXXV.—*On the Nesting of the Spoonbill in Holland.*

By P. L. Sclater and W. A. Forbes.

That the Spoonbill (*Platalea*[*] *leucorodia*) breeds in Holland is a fact well known to every ornithologist; and most egg-collectors are aware that specimens of its eggs obtained in that country are to be purchased at a very cheap rate in the

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[*] Mr. Dresser (B. Eur. pt. 23–24) uses *Platea* as the generic name of the Spoonbill instead of *Platalea*. It may be hoped, however, that this is a mere oversight, and that Mr. Dresser is not prepared to dissent from the canon that Linnean names are to remain inviolate.

London egg-shops. But we are not sure that any ornithologist, at least of this country, has actually visited the nesting-places of this bird, or, at any rate, has published any account of them. In May 1867, as is recorded in Gould's 'Birds of Great Britain' (vol. iv. part 30), Sclater paid a visit to a nesting-place of the Spoonbill at Nieuwer-kerk, near Rotterdam; but though he saw many Spoonbills, the nesting had not then begun; and the lake which he visited is said to have been drained since that time. We hope therefore that it may interest readers of 'The Ibis' to have an account of our recent experiences on this subject.

Being in Holland in the first week of May this year, Sclater made many inquiries as to where the Spoonbills could be seen performing the duties of reproduction, and finally ascertained from Hr. A. A. Van Bemmelen, Director of the Zoological Gardens at Rotterdam, that the most likely place to witness this interesting phenomenon was the Horster Meer, between Amsterdam and Utrecht. At Amsterdam it was ascertained that the first week in July would be a convenient period for the proposed excursion with this object, as about that time the birds would have commenced incubation.

On the 3rd of July, therefore, we found ourselves at the Amstel Hotel, at Amsterdam; and upon visiting Mr. Hegt, the Assistant-Director of the Zoological Society's Gardens there, found that he had kindly made every necessary arrangement for our proposed expedition next day. No railway-station being very convenient for the Horster Meer, he had ordered a carriage to take us from Amsterdam to the scene of action.

Next morning we started about 8 o'clock, and had about three hours' drive, passing the villages of Abgouda and Vreeland before arriving at Overmeer an de Vecht, the little village in which Hr. van Dyk, the lessee of the Horster Meer, resided. The Horster Meer consists of a large tract of water reed-beds and swamp, lying on the right bank of the Vecht, and immediately to the south of the Zuyder Zee. It is between the railways going from Amsterdam to Utrecht on one side, and from Amsterdam to Amersfoort on the other. It belongs to a rich proprietor in Amsterdam, but is farmed out at a considerable rent for the sake of the fish, reeds, and bird's eggs which it produces. The last-mentioned objects are collected from the nests in which they are laid, twice a week during the months of May and June, and sold in Amsterdam to such persons as require a large supply of fresh eggs without being particular as to the source from which they are derived.

On arriving at Overmeer we were received by Hr. van Dyk and escorted to a boat, which conveyed us along a short canal into the Horster Meer. No sooner had we arrived on the lake than the air above us was filled with an enormous flight of Cormorants, who well knew what a visit to their domain portended. A few minutes afterwards about 500 Spoonbills were circling in the air over our heads, their long legs stretched behind them, and their white bodies glistening in the sun. The Meer, so far as visible, was not a very extensive piece of water, being closed in on all sides by enormous reed-beds, the homes of these and other aquatic birds. Having landed at the end of a ditch which penetrated into one of these beds of reeds, we pursued a track which led us first to a breeding-place of the Cormorants. Here was a circular space, perhaps fifty yards in diameter, cleared of reeds, in which the Cormorants' nests stood thick together on the swampy soil. They were formed of rather large sticks, piled somewhat loosely together to a height of about 18 inches above the surface. The top of the nest was only slightly hollowed out, and lined with a few broken reeds. The eggs were in no case more than two in number, the poor birds having been robbed continuously up to that time, and only within the last few days allowed to commence incubation.

Having inspected the Cormorants' breeding-place, we proceeded about fifty yards further through the reed-beds, over a still more treacherous swamp, to the breeding-place of the Spoonbills. The nests of these birds were not situated so near together as those of the Cormorants, but scattered about two or three yards from each other, with thin patches of reeds growing between them. There was, however, a clear open space in the neighbourhood, formed of broken-down reeds, in which the birds were said to congregate. The Spoonbill's nest, in the Horster Meer at least, is a mere flattened surface of broken reed, not elevated more than two or three inches above the general level of the swamp; and no other substance but reed appears to be used in its construction. What the proper complement of eggs would be if the birds were left undisturbed we cannot say; for, as in the case of the Cormorants, the nests are robbed systematically twice a week, until the period when it is known by experience that they cannot produce any more eggs. Then at last the birds are allowed to sit undisturbed. At the time of our visit the season for collecting eggs was just past; but we helped ourselves to eight fresh eggs, from different nests, laid since the last collection had been made. During all the time that we were in the reed-beds the Cormorants and Spoonbills were floating about over our heads, fully aware that there was an enemy in the camp. We were told that there were several other nesting-places of the Spoonbill in different parts of the Horster Meer, containing altogether several thousand nests; so that we may hope that it will be some time before this fine bird becomes extinct in this locality.

The only other bird we found nesting in the Horster Meer was the Black Tern, of which we captured two young chicks.

After refreshing ourselves at the hostelry of Overmeer, we returned to Amsterdam in the evening by a different route, highly satisfied with our day with the Spoonbills.

We may observe, in conclusion, that on looking over Mr. Dresser's account of the Spoonbill in his 'Birds of Europe,' we find him quoting from Schlegel that this bird "is found in the neighbourhood of the large rivers, at Biesboch, Nieuwerkerk, on the Yssel at Rozenburg, and on the Maas: and breeds in Holland, arriving there in April and leaving in September." Again, a few pages further on, Mr. Dresser says, "It breeds in Holland; but I do not find any record of its having of late been found nesting elsewhere in Northern Europe, though in Hungary and South-Eastern Europe it breeds numerously." In Mr. Gould's folio, too, no more detailed account is given, with the exception of the record of Sclater's unsuccessful expedition ten years ago. Now our experiences as to the position of the Spoonbill's nest certainly agree with the details given by Messrs. Dickson and Ross, who met with it breeding near Erzeroum (P. Z. S. 1839, p. 134); and this seems to have been the fullest account known to Mr. Dresser at the time of writing his article. So, although there seems to be no reasonable doubt that in some cases it nests in lofty trees, we may claim to have established the fact that in Holland it breeds on the ground among the reed-beds, and to be able to assure those naturalists who happen to be in Amsterdam at the right time that there is no better way of spending a spare day than an excursion to the Spoonbills' nesting-place on the Horster Meer.

We cannot conclude this short account of a most delightful day without thanking Mr. Hegt most heartily for his kind arrangements for our trip, without which we should probably have encountered considerable difficulty in reaching our destination. It is to be feared that in England we could hardly promise to show our friends an equally interesting sight in such close proximity to our metropolis!

XXXVI.—*Remarks on the* Buceros bicornis *of* Linnæus.

By D. G. Elliot, F.R.S.E. &c.

In 'Stray Feathers' for 1876, p. 385, Mr. Hume expresses the opinion that the name of *Buceros bicornis*, bestowed by Linnæus upon a species of Hornbill, belongs properly to the *B. convexus*, Temminck, described in the 'Planches Coloriées,' and figured on plate no. 530. In order to test the correctness of this view, it will be advantageous to ascertain, as far as may be possible, the material at Linnæus's command when he established the name of *bicornis*; and to accomplish this satisfactorily it will be necessary to examine the older authors cited by him, and whom, it is very evident, he mainly followed. Willughby is among the first of those quoted by Linnæus; and on turning to plate 17. fig. 1 of the 'Ornithology,' we find a very recognizable representation of the head and bill of the Homrai, or "Great Hornbill," as it is called by Jerdon, with its broad flat casque, having the anterior margin curved upwards, and terminating on both sides in miniature "horns." There can be no doubt whatever as to the species this figure is intended to represent. Brisson is another of the more important of the authors referred to, who preceded the twelfth edition of Linnæus's great work (1766), which is the one now quoted. We here find, as stated by Mr. Hume, some considerable confusion existing between the description of the head and casque and that of the body and tail. Brisson, however, expressly states that he had only seen the *head and bill* of the species called by him *Hydrocorax philippensis*; and his description of this portion of the bird, which was at that time in the collection of M. de Réaumur, evidently proved that it was of the same species as the one figured by Willughby in his 'Ornithology.' Brisson does not state where he got the idea of the colour of the plumage of the body and tail; but as he had never seen the bird itself, he must either have copied it from some other description, and unfortunately hit upon the wrong bird, or else have drawn upon his imagination, from which source, however, it must in justice be said, Brisson seldom derived any assistance. The tail of the bird, stated to be composed of twelve feathers, ten black and two white, is very properly characterized by Mr. Hume as one "which no Hornbill in the world has," so far as we know at present, and could not have been described from any specimen. But the parts which Brisson did see, the casque and bill, are accurately described; and it is on this description and and on Willughby's figure that Linnæus based the name of *Buceros bicornis*, to which the diagnosis, "*B.* fronte ossea, plana, antrorsum bicorni," applies. In his description of the plumage Linnæus is as wide of the mark as was Brisson; and he, too, evidently had no specimen of the bird before him, but in a great degree copied Brisson's imaginary description. As, therefore, it is perfectly well established that the portions known to have been in the possession of the authors mentioned belonged to the Homrai, or Great Hornbill, with the flat casque, curved upwards anteriorly, that bird should stand as the *B. bicornis*, Linn., of which name *B. cavatus*, Shaw, is a synonym. The descriptions given by Brisson and Linnæus of the plumage of the *body*, not answering to any known species, cannot receive any consideration in connexion with *B. bicornis*. That of Linnæus applies best to *Buceros* (*Anthracoceros*) *malabaricus* of Gmelin; but the description of the casque shows that this species was not intended.

XXXVII.—*Notes on a 'Catalogue of the* Accipitres *in the British Museum,' by* R. Bowdler Sharpe (1874). By J. H. Gurney.

[Continued from p. 333.]

In my last paper I alluded (*anteà*, p. 332) to the occurrence of *Aquila clanga* in Spain. Since then the Norwich Museum has been enriched by the gift, from Lieut.-Col. L. H. Irby, of an adult male of that species, killed near Seville on the 11th February last, which I take this opportunity of recording*.

The typical Eagles (those of the genera *Uroaëtus* and *Aquila*) to which I am disposed to limit the term "Aquilinæ," pass by an almost imperceptible gradation into the next group, the Hawk-Eagles, for which the designation of "Thrasaëtinæ," suggested by the late Mr. Blyth†, may, I think, be conveniently adopted.

The Hawk-Eagles are all, more or less, distinguished from the typical Aquilinæ, as above restricted, by one or more of the following peculiarities, all of which seem to me to be indicative of Asturine affinities, viz. wings proportionally shorter, tail relatively longer, very large and generally much curved inner and hinder claws, culmen comparatively shorter and more rounded, also, in many species, an occipital crest, and, in many, yellow irides.

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* Col. Irby informs me that another Seville specimen of *A. clanga*, a nearly adult bird, is in the collection of Lord Lilford.

† *Vide* 'Catalogue of the Birds in the Museum of the Asiatic Society,' p. 24.

In the large majority of Hawk-Eagles the tarsi are feathered; but in a few instances, to which I shall have occasion subsequently to refer, they are bare of feathers and are scutellated.

Those of the Hawk-Eagles which differ least from the typical Aquilinæ are comprised in the genus *Nisaëtus*; but this genus is composed of three very distinguishable minor sections, of which I should arrange as the first the Dwarf Eagles *N. pennatus* and *N. morphnoides*—two species which form the subgenus *Hieraëtus* of Kaup, and which, perhaps, might properly be kept distinct under that designation; secondly, *N. fasciatus* (the type of the genus *Nisaëtus*) and *N. spilogaster*; and, thirdly, *N. bellicosus*, which is placed by Mr. Sharpe amongst the *Spizaëti*, but which (following the examples of Blyth* and Jerdon†) I refer to the genus *Nisaëtus*, considering it decidedly too long in the wing to be appropriately arranged among the more short-winged of the Hawk-Eagles, in which company it appears in Mr. Sharpe's volume.

Subsequently to the publication of Mr. Sharpe's work, very full accounts of *Nisaëtus pennatus* have appeared in Mr. Dresser's 'Birds of Europe,' and also in M. Bureau's interesting brochure, which has already been noticed in 'The Ibis' (*anteà*, p. 245); and I have nothing to add to the information there supplied, except to record that the Norwich Museum possesses a specimen from Moulmein, which is a more eastern locality than any recorded either by Mr. Sharpe or by Mr. Dresser.

To Mr. Sharpe ornithologists are indebted for pointing out an excellent criterion for distinguishing this Eagle from its nearly allied Australian congener, *N. morphnoides*, in the fact that in the latter, and not in the former, the under surface of the primaries is conspicuously "barred throughout with greyish buff"*.

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* *Vide* 'Journal of the Asiatic Society,' vol. xiv. p. 174.

† *Vide* 'Birds of India,' vol. i. p. 67 (note).

The localities quoted by Mr. Sharpe for *N. morphnoides* are South Australia and Queensland, to which West Australia should be added, as the Norwich Museum contains an example from the Swan River, and as others from King George's Sound are recorded at page 29 of Mr. Ramsay's 'Catalogue of Australian Accipitres,' where some interesting information will also be found relating to the variations of plumage incident to this species, which may be compared with Mr. Sharpe's additional observations on the same subject in the P. Z. S. 1875, p. 338.

Nisaëtus fasciatus, like *N. pennatus*, has, subsequently to the issue of Mr. Sharpe's volume, been the subject of an article in Mr. Dresser's 'Birds of Europe:' much valuable and detailed information respecting the geographical distribution of this Eagle is contained in this article; but by some oversight the author erroneously cites Damara Land as a locality for this species, and quotes, as applying to it, the late Mr. Andersson's remarks on its more southern congener, *N. spilogaster* †.

In reality there is, so far as I am aware, no trustworthy record of the occurrence of *N. fasciatus* in South Africa; and with regard to its occurrence at Biballa and Huilla, in the Portuguese possessions in South-Western Africa, recorded in the 'Journal für Ornithologie' for 1876, p. 308, it seems probable, as suggested by Mr. Sharpe at page 38 of his edition of Layard's 'Birds of South Africa,' that an error of identification may have occurred, and a further investigation may show that *N. spilogaster* has been mistaken for *N. fasciatus*—a mistake which, as I have already pointed out at p. 138 of 'The Ibis' for 1868, may readily arise from the resemblance between the females of *N. spilogaster* and the males of *N. fasciatus,* in size as well as in general coloration.

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* In Mr. Dresser's article on *N. pennatus*, he speaks of the "under surface of the wings being mottled" in *N. morphnoides*; but, judging from the specimens I have examined, I should say that the word "barred" describes the peculiarity more accurately than "mottled."

† *Vide* 'Notes on the Birds of Damara Land,' pp. 7 & 8, where the original error on this point, which arose from a mistake of my own, will be found corrected; Mr. Dresser, no doubt, quoted from the first edition of Mr. Layard's 'Birds of South Africa,' p. 11.

There is, however, a variation in the markings of the under surface in specimens of *N. spilogaster,* to which I am desirous of briefly alluding. Two distinct phases of such markings occur in adult specimens, or at least in specimens which are so far adult as to have passed beyond the stage of plumage which characterizes this Eagle in its first year; and one of these phases is much more analogous to the character of the lower portions of the plumage in *N. fasciatus* than the other. Thus, in some individuals the white of the underparts is merely interspersed with sparse and narrow dark shaft-marks, slightly more conspicuous than the corresponding markings in *N. fasciatus,* but otherwise of a similar character, whilst in other specimens the dark markings on the under surface are much more numerous and also very much broader.

Whether this difference is due to sex or to disparity of age I am unable to say: the Norwich Museum possesses two nearly adult females of the former type from the Zambesi, and two adult males of the latter, one from the Zambesi and the other from Natal; on the other hand, the specimen figured on pl. 1 of Müller's 'Oiseaux d'Afrique,' which is there stated to be a male, is represented in the less conspicuously variegated plumage, resembling that of the two females preserved at Norwich.

As Mr. Sharpe states that this species is an inhabitant of "North-eastern Africa," it may be well to add that, so far as I am aware, it has never been obtained to the north of the 20th degree of north latitude.

With reference to the remaining species of this genus, *N. bellicosus,* I may remark that the darker portions of the plumage in the adult bird appear somewhat liable to fade; and Mr. Sharpe's description seems to me to have been taken from a partially faded specimen. In a very fine adult example in perfect plumage, which I examined last year in the Zoological Gardens at Antwerp, all the darker portions of the plumage were slaty black, with the feathers of the upper parts, except the head and neck, broadly barred transversely with grey, those of the mantle also showing dark shaft-marks and being narrowly tipped with white.

I may further observe that Mr. Sharpe's note as to the habitat of this Eagle implies that it is restricted to South Africa, which is not the case: on the western side of that continent it has been obtained as far north as Bissao, specimens from that locality being preserved in the Museums at Leyden* and Norwich; whilst to the east it has certainly occurred as far north as Zanzibar†, and probably in Abyssinia and on the White Nile‡.

From the genus *Nisaëtus* we may naturally pass to the consideration of the more typical Hawk-Eagles; but before doing so it will be convenient to refer to three aberrant genera, *Spiziastur*, *Lophoaëtus*, and *Neopus*, each consisting of but a single species.

Spiziastur melanoleucus, a native of tropical America, is remarkable for the extraordinary development of its inner and hind claws, which are the most powerful, in proportion to the size of the bird, of those of any species of this group; but for this peculiarity it might very well be included in the genus *Nisaëtus*, which it resembles in the circumstance of its wings being proportionally longer than those of the more typical Hawk-Eagles, and also in the very slight development of its occipital crest; in common with the majority of the Hawk-Eagles it possesses the Asturine yellow iris§.

Lophoaëtus occipitalis is an African form, and remarkable for the extraordinary development of the occipital crest, which is greater, in proportion to the size of the bird, in this than in any other Hawk-Eagle: it also has a very bright yellow iris; but in other respects its Asturine affinities appear to be but slight, its wings being proportionally more elongated than in the typical members of the group, and its bill and talons being comparatively feeble.

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* *Vide* 'Muséum des Pays-Bas,' Accipitres, p. 59.

† *Vide* Finsch and Hartlaub's 'Vögel Ost-Afrika's,' p. 47.

‡ *Vide* Von Heuglin's 'Systematische Uebersicht,' p. 7, and 'Ornithologie Nordost-Afrika's,' p. 59; it seems, however, not impossible that the species referred to, doubtfully, by Von Heuglin may have been *Spizaëtus coronatus*.

§ My authority for the colour of the iris is a memorandum attached to a specimen obtained in Guatemala by Mr. Skinner, and preserved in the Norwich Museum.

Mr. Sharpe describes this species as having for its "range the whole of Africa," which is not quite accurate. I believe that Drs. Finsch and Hartlaub are correct in stating, at p. 51 of the 'Vögel Ost-Afrikas,' that its northward range does not extend beyond the 16th degree of north latitude. Mr. Sharpe also omits to mention that this species is found in Madagascar, a circumstance which appears to be satisfactorily established*.

The third, and perhaps the most remarkable, of these three aberrant forms is the oriental *Neopus malayensis*, a species which is Aquiline in the form of its bill, in the length of its wings, and in the dark colour of the iris, but which is allied to the Hawk-Eagles by its largely developed tail, and in a still greater and (if the phrase may be permitted) in an exaggerated degree by its powerful inner toe with an enormous claw, which, together, are more than twice the length of the outer toe and claw, the latter being comparatively diminutive. The claws in this species are proportionally longer and less curved than those of any other Hawk-Eagle; and their comparatively slender shape probably renders them somewhat less powerful than would otherwise be the case.

Mr. Sharpe amalgamates the genera *Spizaëtus* and *Limnaëtus*; but I think it better to separate the shorter-winged species, *S. ornatus*†, *S. tyrannus*, and *S. coronatus*, under the title of *Spizaëtus*, of which genus *S. ornatus* is the type, and to allow the remaining species included by Mr. Sharpe in that genus to stand under the generic name of *Limnaëtus*, of which *L. caligatus* is the type, and under which I would also include *L. kieneri* and *L. isidori,* which Mr. Sharpe has separated under the generic name of *Lophotriorchis,* but, as I venture to think, on somewhat insufficient grounds.

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* *Vide* Hartlaub's 'Ornithologischer Beitrag sur Fauna Madagascars,' p. 16, and 'Vögel Madagascars,' p. 4.

† Mr. Sharpe substitutes for the specific name of "*ornatus*," commonly in use, that of "*mauduyti*"—which I consider undesirable, as the two names were published simultaneously, and as the description given under the head of "*ornatus*" is the clearer of the two, being evidently taken from a more adult example.

I propose to refer first to the genus *Limnaëtus,* and subsequently to *Spizaëtus.*

In the 'Proceedings' of the Zoological Society for 1860, p. 342, my late friend, Mr. G. R. Gray, described and figured, under the name of *Aquila gurneyi,* a very fine Eagle, which was first obtained by Mr. Wallace in Batchian, but which also occurs in several other islands of the eastern ocean, as enumerated in Mr. Sharpe's volume. Mr. Sharpe includes this species in the genus *Spizaëtus* ; I am, myself, disposed to agree in this view so far as to consider it a somewhat abnormal species of that portion of Mr. Sharpe's genus *Spizaëtus,* for which I would use the more restricted title of *Limnaëtus.* I think, however, that there is a considerable degree of truth in the remark made by Mr. Gray in his original description of this species, that "this fine bird partakes of the form of *Aquila malayensis* ;" and it is for this reason that I allude to it as next in order to that species, which it recalls by its very large (though more curved) inner claw, by its somewhat elongated bill and wings, and by its largely developed and narrowly barred tail; the iris, however, is of a different character, being stated by Mr. Wallace to be "yellow-olive"*.

Limnaëtus gurneyi appears to be always destitute of a crest, in which respect it resembles another and much more typical species, *Limnaëtus lanceolatus,* of Celebes, respecting which I have nothing to add to the notice contained in Mr. Sharpe's volume, except to mention that it also inhabits the Sula Islands†; and I will therefore proceed now to consider its nearly allied but more widely distributed congener, *Limnaëtus*

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* *Vide* Ibis, 1868, p. 13.

† *Vide* Schlegel's 'Valk-Vogels,' pl. 7. fig. 3; also the Marquis of Tweeddale's paper on the Birds of Celebes, in the 'Transactions' of the Zoological Society, vol. viii. p. 34.

caligatus (the *Spizaëtus limnaëtus* of Mr. Sharpe's Catalogue), which is also usually, though not invariably, a crestless species, or with the crest but very slightly developed*.

This Hawk-Eagle occurs under two very distinct phases of plumage, if, indeed, both be really referable to one species: these are the white- or pale-fulvous-headed and white-breasted phase figured at pl. 127 of Temminck's 'Planches Coloriées,' under the name of *Falco niveus*, and the fuliginous or melanistic phase figured at pl. 134 of the same work, and also on pl. 36 of Horsfield's 'Zoological Researches in Java' under that of *Falco limnaëtus*; besides which, specimens occur apparently intermediate between these two extremes of coloration.

All three of the above-mentioned phases are also figured in Schlegel's 'Valk-Vogels,' in which very useful work the pale-headed phase is represented on pl. 6. fig. 2, from Flores †, and on pl. 8. fig. 2, from Java; the intermediate on pl. 6. fig. 3, from Java, and on pl. 7. fig. 1, from Borneo; and the wholly fuliginous on pl. 8. fig. 1, from Java.

Mr. Sharpe describes the latter phase as the adult plumage of the species; but it appears to be certain that it is sometimes assumed from the nest: one of the figures in Schlegel's 'Valk-Vogels' (pl. 8. fig. 3) represents a nestling from Java in which the fuliginous plumage is immediately succeeding the down; this is probably the same specimen which is thus described in the 'Muséum des Pays Pas' (Astures, p. 11):—"No. 30, très-jeune individu retiré du nid, revêtu en partie du duvet, en partie de plumes, le duvet blanc, les plumes d'un brun-noir uniforme, Java."

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* I have never seen a specimen of either phase of colouring with a crest exceeding an inch in length; but instances of longer crests have been recorded.

† This is the only specimen I am acquainted with from any locality east of Java; Professor Schlegel remarks respecting it ('Valk-Vogels,' p. 55), "il ressemble en général à la variété à teintes claires de Java, mais il a le blanc beaucoup plus pur, tandis que le brun du dos, des ailes, et de la queue est beaucoup plus foncé et presque noir." In the Supplementary Catalogue of the Muséum des Pays Bas (Accipitres, p. 57) the following measurements are given of this specimen—"aile 16 pouces 3 lignes, queue 11 pouces 3 lignes."

Dr. Horsfield, in the article on "*Falco limnaëtus,*" in his 'Zoological Researches in Java,' writes thus,—"Both the testimony of the natives and the remarks I personally made on the manners of our bird have fully convinced me that *F. niveus* is a species distinct from *F. limnaëtus.*" The same view was taken by Dr. Bernstein, who also resided for some years in Java, and the substance of whose remarks on this subject, extracted from his article in vol. viii. of the 'Journal für Ornithologie' (pp. 419–425), I here subjoin:—"It is certainly not to be denied that there is not any difference between the measurements of *F. niveus* and *F. limnaëtus,* and that very dusky-coloured individuals of *F. niveus* occur which seem to form the transition from that species to *F. limnaëtus.* Nevertheless, having shot numerous individuals and compared them anatomically, having observed others at the nest, taken the young from it, reared and kept them for years, I cannot do otherwise than express myself against the identity of the two species. I have found the nest of *F. limnaëtus* nine times, and observed the old ones at it; both always belonged to the same species: the young are at first covered with fine white down, between which, here and there, the brown feathers of the perfect plumage begin to appear; and three which I brought up corresponded perfectly with the old ones. The nest of *F. niveus* I found four times; and two of these contained a single half-fledged young bird, both of which I took and reared: in their first plumage the throat was pure white, but with three more or less distinct dusky streaks (which are also perceptible on the throat of *F. limnaëtus*). The breast and abdomen are also white, but with large blackish brown longitudinal spots, whilst the thighs have rather lighter narrow transverse streaks; the feathers of the head and nape are dirty white, assuming a brownish hue towards the tip, and with blackish brown shaft-marks; the feathers of the back and scapulars are grey-brown, darker towards the tip, and lighter, and ultimately white, towards the base; the quill-feathers are brown, with lighter transverse bars, and the rectrices similar but paler: with increasing age the dusky shaft-marks on the head, neck, and breast seem gradually to disappear till these parts become at length pure white; such pure white birds are much rarer than the variegated ones, and are, from their greater shyness, less easily shot. I obtained two specimens of a darker variety, in which the white on the back and underparts is replaced by a dirty yellow-brown, which is lighter on the throat and belly than on the breast and back; these specimens, however, may be recognized as belonging to *F. niveus* by the very distinct transverse bars on their wings and tail.

"On a minute anatomical comparison of *F. limnaëtus* and *F. niveus* some differences in the structure of the skeleton may be observed, which, however insignificant, enable me to distinguish between the skeletons in my possession. Thus, for example, the space between the processus maxillares of the two bones of the palate is less in *F. limnaëtus* than in *F. niveus,* and in consequence the mussel-shaped apophysis of the palate of the upper mandible-bone contribute more to the formation of the hard palate in the latter than in the former; also in the skull of *F. limnaëtus,* where the outer edge of the palate-bone passes over to the ossa omoïdea, there is on each side a sharp angle or corner, directed outward and backward, whilst in *F. niveus* the outer edge bends gradually into the backward one. All these differences, as well as the general anatomy of these birds, I have described more minutely in a separate article in the sixth volume of the Treatises of the Society of Natural Philosophy of Batavia."

Mr. Sharpe gives the description of a Sumatran nestling of the paler race in the British Museum, which seems not to differ materially from the Java specimens described by Dr. Bernstein.

Whether the two races are really specifically distinct, or only different in the darker being an hereditary melanism of the paler, and whether the pale birds ever assume a plumage resembling those which are melanistic *ab ovo*[*], must, I think, remain an open question. Should the two races be admitted as specifically distinct, the paler must stand as *Limnaëtus caligatus* (Raffles), and the fuliginous as *L. horsfieldi* (Vigors).

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[*] A fuliginous specimen from Java in the Norwich Museum has some yellowish white feathers scattered about the lower portion of the tarsi; and some wholly fuliginous specimens certainly show more variation of tint than others.

The irides in both races are said by Dr. Bernstein to be dusky brown; Dr. Horsfield, however (probably describing an older specimen), speaks of the irides in *L. horsfieldi* as being yellow; those of *L. caligatus* he does not mention.

In a living specimen of *L. caligatus* from Upper Burmah, presented to the Zoological Society of London by Captain H. Feilden, by whom it was taken from the nest near Thayetmyo in May 1871, the colour of the irides and of the plumage was thus noted by me when I saw the bird in November 1874:—"Iris hazel; crest very slight; back dark (blackish brown); breast and abdomen white, with large longitudinal brown marks; transverse bars of a lighter brown on the thighs; tarsi white; upper surface of tail dark brown, with four darker bars besides the terminal one." Captain Feilden was so good as to inform me that up to the date when he last saw it (November 1873) the bird had undergone no change from its nestling-plumage, "except losing the paler edge of the wing- and tail-covert feathers common to all Hawk-Eagles." Between November 1874 and October 1875, when the bird died whilst moulting, the only change which I observed in its plumage was that on the abdomen and flanks the dark brown lanceolate marks had considerably extended in breadth towards the end of each feather, and also over the whole lower part of the feather in some cases, and the greater part of it in others.

The skin of this specimen is now preserved in the Norwich Museum; it proved on dissection to be a male.

Captain Feilden wrote to me that he had frequently shot adult males of this species, which were all very similar and not unlike the specimen presented by him to the Zoological Society, except that the spots on the breast were much fewer and smaller.

I have measured seventeen specimens of *L. caligatus* from Java, Borneo, Malacca, and Nepal*: the largest specimen has the wing 17·2 and the tarsus 4·2; in the smallest the wing is 13·5 and the tarsus is 3·3 inches.

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* The specimen from Upper Burmah, described above, is not included in these measurements, owing to the imperfect state of its wings.

I have also measured eight specimens of *L. horsfieldi* from Java, Borneo, and Malacca: in the largest of these the wing measures 17 and the tarsus 4; in another specimen the wing measures 16·4 and the tarsus 4·5; in the smallest of the eight the wing is 15·4 and the tarsus 3·6 inches.

In neither race does there appear to be any constant difference in size between specimens from different localities*.

I have been indebted to the kindness of the Marquis of Tweeddale for an opportunity of examining a specimen in his collection of the Hawk-Eagle inhabiting the Andaman Islands, *L. andamanensis* (Tytler), which appears to differ but little, except in its smaller dimensions, from *L. caligatus* as distinguished from *L. horsfieldi*. The colour of the iris in this species appears to be "reddish brown"† in some specimens, and "deep yellow"‡ or "amber"§ in others.

Since the publication of Mr. Sharpe's volume notices of this species have appeared in 'The Ibis' for 1874, p. 127, also in 'Stray Feathers' for 1874, p. 142, and for 1876, p. 280, which should be consulted for further information respecting it.

I propose now to refer to a Hawk-Eagle which I believe to be exclusively Indian, *Limnaëtus cirrhatus*, respecting the geographical distribution of which Mr. Hume has the following remark in 'Stray Feathers,' vol. iii. p. 46:—"It is a Peninsular species; and a line drawn from Aboo to Etawah, and thence by Shergotty to Calcutta, indicates very fairly its northern limits."

Mr. Sharpe records two immature specimens from Nepal as existing in the British Museum, which I recently had an opportunity of examining, and respecting which I came to the conclusion that they were both referable to *L. caligatus.*

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* Since writing the above I have received No. 1 of vol. v. of 'Stray Feathers,' which contains at p. 9 an important note on *Limnaëtus caligatus*, that should by all means be consulted, especially as showing the great rarity of the fuliginous bird (*L. horsfieldi*) in India, which, considering its comparative abundance in Malacca and Java, is, I think, an argument in favour of its specific distinctness from *L. caligatus*.

† *Vide* Hume's 'Rough Notes,' vol. i. p. 205.

‡ *Vide* 'Stray Feathers,' 1874, p. 142.

§ *Vide* Ibis, 1874, p. 127.

L. cirrhatus appears chiefly to differ from from *L. caligatus* in possessing an elongated occipital crest, which varies much in length, but, I believe, is never entirely absent, except, perhaps, very rarely in moulting specimens.

So far as I know, *L. cirrhatus* is not subject to melanism.

In 'Stray Feathers,' vol. iv. p. 356, Mr. Hume gives an account of the changes of plumage and colouring incident to this Hawk-Eagle in its progress to maturity. These changes appear to occur almost entirely in the reverse order to those observed by Dr. Bernstein in the case of Javan specimens of *L. caligatus*—a difference which, should it prove constant, will strongly confirm the entire distinctness of the two species; I suspect, however, that the changes through which *L. caligatus* passes will prove somewhat variable, and that the differences between it and *L. cirrhatus* in this respect will not prove altogether constant. The plumage of a Sumatran nestling of *L. caligatus,* which is preserved in the British Museum and described in Mr. Sharpe's volume, appears to indicate that such is the fact.

I have not had an opportunity of examining many examples of the Indian *L. cirrhatus;* but of four, respecting which I have preserved memoranda, the largest measured 17·4 inches in the wing and 4·5 in the tarsus, the smallest 16·3 in the wing and 3·5 in the tarsus.

Limnaëtus ceylonensis (*Falco ceylonensis* of Gmelin), the ordinary Hawk-Eagle of Ceylon, which Mr. Sharpe identifies with *L. cirrhatus,* is a decidedly smaller bird; I have measured ten Ceylonese specimens, of which the largest had the wing 15·2 inches in length from the carpal joint, and the tarsus 3·6, and the smallest had the wing 14 inches and the tarsus 3·4.

Judging from the specimens which I have seen, I should say that the ordinary plumage of *L. ceylonensis* varies but little, and much resembles the first dress of *L. cirrhatus* as described by Mr. Hume in 'Stray Feathers,' vol. iv. p. 356.

Mr. Layard, in his papers on the ornithology of Ceylon, published in the 'Annals of Natural History' for 1851, refers to the ordinary Hawk-Eagle of that island* under the title of "*Spizaëtus limnaëtus*, Horsf.," and appends to his account of it the following remark:—"There is a singularly dark variety of this species which I have only seen at Port Pedro, and that but very rarely." The only Ceylonese specimen which I have seen that could at all be called a "dark variety," is a living one recently presented by Captain W. V. Legge to the Zoological Society of London. This bird much resembles in plumage that of Captain Feilden's Thayetmyo specimen of *L. caligatus*, which I have already described; but it seemed to me to be decidedly smaller, and it has an occipital crest which, though not now much elongated, is slender and well defined; the irides in this specimen are a pale greyish straw-colour. I understand that it is now five years old, and was taken from the nest near Point de Galle by Captain Legge, who informs me that he intends to favour the readers of 'The Ibis' with some notes on the changes of plumage which it has undergone, and on those of the Ceylon *Spizaëti* generally. I understand from Captain Legge that the colour of the iris in this specimen is that usual to the young bird of both the paler and the darker phases of plumage, and that both these have a yellow iris when adult, which this individual has probably not acquired in consequence of having been kept in captivity.

Mr. Hume's description of his *L. sphynx*, from Travancore†, seems to me to be probably referable to a specimen of *L. ceylonensis* intermediate in coloration between the ordinary pale-chested Ceylon bird and the darker plumage exhibited in the specimen lately presented by Captain Legge to the Zoological Society.

I propose now to refer to *Limnaëtus nipalensis*, respecting which I have to remark that Japan and Formosa should be added to the localities quoted for this species by Mr. Sharpe.

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* One of Mr. Layard's Ceylon specimens is preserved in the Norwich Museum.

† *Vide* 'Stray Feathers,' vol. i. p. 321.

Specimens from both Formosa and Japan are preserved in the Norwich Museum; and the only figure of this fine species yet published is, I believe, that of a Japanese specimen, not fully adult, which is given on pl. 3 of the 'Fauna Japonica.' *L. nipalensis* has thus a more northern range than any other species of the genus.

I may here mention that by an accidental error the description of a nestling of *Spilornis cheela*, preserved in the British Museum, has been inserted at p. 267 of Mr. Sharpe's volume as that of a nestling of *Limnaëtus nipalensis*. The tarsi in this very young specimen are greatly decayed, which probably led to this mistake.

It is remarkable, as has been already pointed out by the Marquis of Tweeddale*, that the peculiarity which appears in this, the largest of the *Limnaëti*, of the tarsal feathering extending onto the first joint of the middle toe, is shared by only one other species, and that the smallest of the genus, *L. alboniger*, respecting which I have nothing further to add to Mr. Sharpe's account, except to observe that the white tip to the crest in the adult plumage is not a constant character, and also that the Hawk-Eagle from Java, figured in Schlegel's 'Valk-Vogels,' pl. 6. fig. 1, appears to me to be probably an immature example of this species, judging from this figure and from the measurements of the bird quoted in the 'Muséum des Pays-Bas,' Astures, p. 11.

Another of the smaller eastern *Limnaëti* is *L. philippensis*, which appears to be confined to the Philippine Islands. This species is well figured in the Marquis of Tweeddale's valuable paper on the Birds of the Philippine Archipelago† from an adult specimen in the Norwich Museum; a slightly younger bird in the same collection is somewhat paler, especially about the head, and is less distinctly barred on the lower part of the tarsi.

There is but one other eastern Hawk-Eagle, *L. kieneri*, which Mr. Sharpe makes the type of his genus *Lophotriorchis*. This bird certainly differs, in the character of its coloration, both when immature and when adult, from the other eastern *Limnaëti*; and it also has a somewhat less development of the tail; I doubt, however, as I have already mentioned, its being really generically separable from the genus *Limnaëtus*.

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* *Vide* Ibis, 1874, p. 128.

† *Vide* 'Transactions of the Zoological Society,' vol. ix. pl. 24.

The immature plumage of this Hawk-Eagle will be found described in the addenda to Mr. Sharpe's volume at p. 458.

To the localities quoted by Mr. Sharpe for this species, Batchian, Java, and Ceylon must be added, a specimen from each of these islands being preserved in the Norwich Museum. In 'Stray Feathers,' vol. v. p. 10, Mr. Hume records this species from N.E. Cachar, and adds that "in N.E. India, as In Sikkim, for instance, it is far from uncommon;" it is, however, a decidedly rare species in European Museums.

Mr. Sharpe associates with *L. kieneri*, in his genus *Lophotriorchis*, *L. isidori* of N.W. South America, a much larger species, of similar colouring, both in its first and last stages of plumage, but with a more largely developed tail.

Through the kindness of Dr. A. Dubois, I had the opportunity, last year, of examining, at the Royal Museum of Natural History at Brussels, the two type specimens of "*Spizaëtus devillii*," figured and described by that gentleman in the 'Bulletins de l'Académie Royal de Belgique,' 2nd series, vol. xxxviii. pts. 1 & 2, and found them to be immature examples of *L. isidori*—that figured by Dr. Dubois on pl. 1 as "*S. devillii*, adult," being the first year's plumage of *L. isidori*, and that represented on pl. 2 as "*S. devillii*, jeune," being a very curious stage, intermediate between the first dress of *L. isidori* and the fully adult plumage figured by Des Murs in the 'Iconographie Ornithologique,' pl. 1.

Neither of these immature stages are described by Mr. Sharpe; but they may be readily recognized by a reference to the figures and descriptions supplied by Dr. Dubois.

The Norwich Museum contains a specimen of *L. isidori* in its first, and also one in its last stage of plumage; but I have never seen the intermediate dress, except at Brussels. It is worthy of note that this intermediate dress has no corresponding phase, so far as I am aware, in *L. kieneri*.

The two specimens of this rare species preserved in the

Brussels Museum are from Baiza, in Ecuador; those in the Norwich Museum are, like the type specimen figured by Des Murs, from New Granada; and an adult example in the collection of Messrs. Salvin and Godman is from the neighbourhood of Medellin, in the Columbian province of Antioquia.

Of the Hawk-Eagles with feathered tarsi there remain but three to notice, those to which I propose to restrict the generic name *Spizaëtus*, viz. *S. ornatus* and *S. tyrannus* of Tropical America, and *S. coronatus* of Africa. These three species exhibit to a still greater extent than those of the genus *Limnaëtus* the short wings and largely developed tails which are more or less conspicuous in the large majority of the group which I would (as already mentioned) designate under the title of Thrasaëtinæ. All these three Hawk-Eagles have a yellow iris when adult; but it is of a brighter and deeper yellow in the two American species than in their African congener.

With regard to the two first-named species, I have nothing to add to Mr. Sharpe's account, except to remark with reference to the definition of the principal colour of the adult of *S. tyrannus* as "black above and below," that a specimen now living in the Gardens of the Zoological Society exhibited, when it first acquired its adult dress, a decided slaty tinge on the black portions of the plumage, and especially on the head and underparts, which probably disappears as the feathers become worn, and in specimens which have been long preserved.

Mr. Sharpe defines the habitat of *S. coronatus* as "South and West Africa," and in his edition of Layard's 'Birds of South Africa,' p. 39, gives Senegal as its north-west and Natal as its north-eastern limit, so far as has at present been ascertained. It is curious that this noble species has not yet been recognized further to the northward in East Africa; but such is, I believe, the fact.

Spizaëtus coronatus bears a remarkable resemblance in its general conformation to the Great Harpy Eagle of Tropical America (*Thrasaëtus harpyia*); but the latter differs from it and from the other Hawk-Eagles to which I have hitherto referred, in having its extraordinarily powerful tarsi scutellated instead of feathered—a peculiarity which it shares with the remaining species of this group.

I have nothing to add to Mr. Sharpe's account of the Harpy Eagle, except to suggest a doubt as to whether the young bird described by him may not have made some progress towards the assumption of adult dress. I have a strong impression that I have seen young birds of this species with much less black about them than that described by Mr. Sharpe; but I am not able at the present moment to refer to such a specimen, or to give the description of such a one in detail, and I will therefore pass to an allied species from Tropical America, *Morphnus guianensis*, which appears, from its elongated tarsi and short toes, to lead naturally to the next group which I shall have to notice, the *Circaëtinæ*, or Harrier-Eagles.

As Mr. Sharpe does not describe the immature plumage of *M. guianensis*, I add the following particulars, which I noted from an immature specimen in the Brussels Museum:—Entire head, back of neck, and crest pure white; entire mantle very pale brownish grey, finely vermiculated with darker markings of the same; these on the scapulars assume the form of six irregular transverse bars, and of three similar bars on the primary coverts; lower back and upper tail-coverts pure white; bastard wing blackish slate-colour, with two transverse bars and a tip of pale mottled brownish grey; primaries with four to five such bars (the uppermost partly white) and a light tip; the secondaries and tertials with similar bars and a broad pale tip; tail with ten dark transverse bars, between which are narrow interspaces mottled with two shades of brownish grey, tip of tail whitish; similar bars are apparent on the under surface of the tail; entire remainder of the under surface of the bird pure white.

Before concluding my remarks on the Thrasaëtinæ, I must allude to two large birds of prey (*Harpyopsis novæ-guineæ* and *Megatriorchis doriæ*) recently discovered in New Guinea by Signor D'Albertis, which I have not seen, but which, I think, most probably belong to the Hawk-Eagles, judging from the description of them contributed in November 1875 by Count T. Salvadori to the seventh volume of the 'Annali del Mus. Civ. di St. Nat. di Genova.'

As but few English ornithologists possess the work containing these descriptions, it may not be improper here to reproduce them:—

"Gen. nov. *Harpyopsis*: genus novum ex subfamilia Accipitrinarum, rostro robustissimo, valde alto et adunco; naribus oblongis, verticalibus; loris et regione circumoculari fere nudis, rare pilosis; alis brevissimis, valde rotundatis, remigibus primariis paulo longioribus quam secundariis; cauda longissima, rotundata; tarsis mediocribus, robustis, scutis latis transversis antice et postice obtectis, tertio superiore antice plumosis; digitis mediocribus, externo paulo longiore quam interno, medio longiusculo; unguibus permagnis, validissimis, inferne sulcatis; plumis cervicis copiosis, longiusculis, latis, apice rotundatis.

"*H. novæ-guineæ.* Supra fusco-brunnea, plumarum limbo apicali albido; subtus sordide alba, jugulo et pectore summo sordide griseo-tinctis; alis supra dorso concoloribus; remigibus fusco-brunneis, fasciis transversis latis obscurioribus, sed parum conspicuis notatis, fascia apicali latiore, pogonio interno remigum albo-marmorato, remigibus subtus magna ex parte albo- et griseo-marmoratis, parte apicali grisea fusco transfasciata, apice ipso late fusco; cauda supra dorso concolore, fasciis sex obscurioribus undulatis parum conspicuis notata, fascia apicali latiore, limbo apicali rectricum albido; cauda subtus grisea, albido marmorata, fasciis tribus tantum fuscis notata, fascia apicali latiore, rectricibus rachidibus supra fuscis, subtus partim albis, partim fuscis; rostro plumbeo fere nigro, pedibus griseis, iride obscure flava.

"Long. tot. $0^{\text{m}}{\cdot}870$, al. $0^{\text{m}}{\cdot}480$, caud. $0^{\text{m}}{\cdot}410$, rostri culm. $0^{\text{m}}{\cdot}058$, rostri hiat. $0^{\text{m}}{\cdot}058$, rostri alt. $0^{\text{m}}{\cdot}036$, tarsi $0^{\text{m}}{\cdot}144$, digiti med. cum ungue $0^{\text{m}}{\cdot}094$, ung. post. $0^{\text{m}}{\cdot}045$.

"*Megatriorchis*, gen. nov. *Megatriorchis* novum genus ex subfamilia Accipitrinarum, alis brevissimis, remigibus primariis paulo brevioribus quam secundariis; cauda longissima, rotundata, tarsis mediocribus, robustis, antice et postice scutis transversalibus obtectis, digitis validis, interno breviore quam externo, unguibus digiti interni et posterioris validissimis.

"*Megatriorchis doriæ*, fem. Plumis pilei et cervicis nigris, rufescente marginatis, plumis cervicis partim albo-marginatis dorso, uropygio et supracaudalibus fusco-nigris, fasciis transversis fusco-griseo-rufescentibus ornatis, plumarum marginibus apicalibus griseo-rufescentibus; genis et fascia laterali occipitis utrinque albis, longitudinaliter fusco-lineatis; plumis auricularibus postice fusco-nigris, fasciam postocularem latam nigram constituentibus; subtus albus, maculis longitudinalibus fuscis ornatus, gulæ et subcaudalium maculis linearibus striatis, pectoris summi et imi latis brunneo-nigris, pectoris medii valde pallidioribus, sed linea scapuli nigra: remigibus et rectricibus supra fasciis alternis fusco-nigris et fusco-griseis notatis, subtus griseis fusco transfasciatis, caudæ limbo apicali griseo, caudæ fasciis supra 24; rostro nigro, ceromate cinereo; iride castanea; pedibus cinereis, pallidis.

"Long. tot. circa $0^{m}{\cdot}680$, al. $0^{m}{\cdot}350$, caud. $0^{m}{\cdot}320$, rostri culm. $0^{m}{\cdot}038$, rostri hiat. $0^{m}{\cdot}038$, tarsi $0^{m}{\cdot}090$, digit med. cum ungue $0^{m}{\cdot}074$, ung. dig. post. $0^{m}{\cdot}036$."

It appears that one specimen of each of these remarkable Raptores was procured on Yule Island, on the south coast of New Guinea, and that one other example of *Harpyopsis novæ-guineæ* has been obtained at the foot of Mount Arfak.

[To be continued.]

XXXVIII.—*Description of two new Ant-birds of the Genus* Grallaria, *with a List of the known Species of the Genus.* By P. L. Sclater, M.A., F.R.S.

(Plates VIII., IX.)

While introducing to science a fine new Ant-bird of the genus *Grallaria*, recently discovered by Mr. T. K. Salmon in Antioquia, together with another apparently unrecognized form of the genus, I take the opportunity of giving a complete list of the species of this group, to which many important additions have been made since the publication of my "Synopsis of the American Ant-birds" in 1858*.

The genus *Grallaria*†—one of the best-marked forms amongst the Formicariidæ, and offering many points of external resemblance to the *Pittæ* of the Old-World tropics—may be conveniently divided into four sections, as follows:—

a. *Squamigeræ,* containing the two species *G. squamigera* and *G. gigantea,* which are easily distinguishable from the rest of their congeners by their large size and strong thick bill.

b. *Reges,* containing the seven representative forms of the *G. rex* sive *varia,* some of which are well defined, while others scarcely deserve specific separation. These I take geographically from north to south.

c. *Uniformes,* those with the plumage generally of a uniform character, without flammulations upon the breast and belly. This group consists exclusively of high-ranging Andean species.

d. *Flammulatæ,* containing the remaining nine species, all of which have the under surface more or less flammulated, and lead us on to the group of diminutive species which I have separated under the name *Grallaricula*‡.

The genus *Grallaria* therefore, as thus arranged, contains twenty-seven species known to me. The diagnoses added under each head are taken from examples in my own collection and that of Messrs. Salvin and Godman, in which are to be found examples of every species except *Grallaria gigantea, G. varia, G. modesta,* and *G. ochroleuca.*

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* "Synopsis of the American Ant-birds," pts. i., ii., iii., P. Z. S. 1858, pp. 202, 232, 272. See also supplement, P. Z. S. 1868, p. 571.

† The genus *Grallaria* was founded by Vieillot in 1816, on Buffon's "*Roi des Fourmilliers*" (= *G. varia*). According to my views it is equivalent to, or should comprehend the following generic terms:—

Myioturdus, Boie, Isis, 1826, p. 972. Type *G. varia.*

Myiotrichas, Boie, Isis, 1831, p. 542 = *Myioturdus.*

Colobathris, Gloger, Hand. u. Hilfsb. d. Nat. p. 304 (1842). Type *G. varia.*

Codonistris, Gloger, Hand. u. Hilfsb. d. Nat. p. 303 (1842). Type *G. brevicauda.*

Hypsibemon, Cabanis, Wiegm. Archiv, 1847, pt. i., p. 217. Type *G. ruficapilla.*

‡ P. Z. S. 1858, p. 283.

In his list of *Grallariæ,* published in 1842 (Rev. Zool. 1842, p. 333), Lafresnaye was able to include only nine species of this genus. In the 'Nomenclator' (1873) Mr. Salvin and I gave twenty.

Sect. A. GRALLARIÆ SQUAMIGERÆ.

1. GRALLARIA SQUAMIGERA.

Grallaria squamigera, Prév. Voy. Vénus, Ois. pl. 1; Lafr. Rev. Zool. 1842, p. 333; Bp. Consp. p. 204; Sclater, P. Z. S. 1855, p. 145, et 1858, p. 280, et Cat. A. B. p. 192; Scl. et Salv. P. Z. S. 1874, p. 678, 1875, p. 235, et Nom. Av. Neotr. p. 75.

Myiotrichas squamigera, Cab. et Hein. Mus. Hein. ii. p. 6.

Colobathris squamigera, Cab. Orn. Not. i. p. 217.

Suprà cineracea, olivaceo in alis tincta, remigibus et rectricibus fuscescentibus; loris et corpore toto subtùs cum subalaribus saturatè fulvo-rufis, præcipue in gutture et in pectore fasciolis nigris irregulariter aspersis; ventre medio et crisso immaculatis; rostri mandibulâ inferiore ad basin pallidâ; pedibus clarè corylinis: long. tota 9·5, alæ 5·8, caudæ 2·4, tarsi 2·4.

Hab. Venezuela, Columbia, Æquatoria, Peruvia et Bolivia.

Mus. P. L. S. et S.-G.

The series of nine specimens of this bird in the collections above named presents no great amount of variation. In two skins, collected by Mr. Buckley in Ecuador, the throat is nearly white; but I observe a tendency to this in other examples from different localities, and one of the same collector's specimens from Yungas, Bolivia, agrees in every way with typical examples from Columbia. Mr. Goering obtained this species in the Sierra Nevada of Merida; so that it appears to extend throughout the Andes from Venezuela to Bolivia.

2. GRALLARIA GIGANTEA.

Grallaria gigantea, Lawr. Ann. L. N. H. New York, viii. p. 346 (1866).

Suprà saturatè brunnea, nuchâ cineraceâ; loris et corpore subtùs cum subalaribus fulvo-rufis, fasciis transversis nigris frequentèr transvittatis: long. tota 9·0, alæ 6·0, caudæ 2·6, tarsi 2·7.

Hab. Æquatoria.

Obs. Sp. a præcedente colore dorsi, fasciis corporis subtùs crebrioribus et crassitie majore diversa.

Until I had actually seen the typical example of this fine Ant-Thrush, which has been most liberally intrusted to my examination by the authorities of the Smithsonian Institution, I was, I confess, rather unwilling to believe in its distinctness from its near ally, *G. squamigera,* which actually traverses Ecuador, and extends into Peru and Bolivia. But I was quickly convinced at the first sight of the bird.

The only known example of this species was obtained in Ecuador by Mr. John Akhurst. It bears the number 35101 in the Smithsonian Catalogue. It is not known more exactly where the specimen was procured.

Sect. B. GRALLARIÆ REGES.

3. GRALLARIA MEXICANA.

Grallaria guatemalensis, Sclater, P. Z. S. 1856, p. 294, et 1858, p. 280 (pt.).

Grallaria mexicana, Sclater, P. Z. S. 1861, p. 381, 1863, p. 175, et Cat. A. B. p. 191; Scl. et Salv. Nom. Av. Neotr. p. 75.

Suprà olivaceo-brunnea, nuchâ cineraceâ, plumis omnibus margine angusto nigro præditis; rectricibus externè et caudâ totâ rufis: subtùs pallidè fulva, in gutture et in ventre medio albicans, torque colli interrupto nigro; subalaribus et remigum marginibus internis pallidè castaneis: long. tota 7·5, alæ 5·1, caudæ 2·0, tarsi 2·1.

Hab. Mexico merid. terra calida.

Mus. P. L. S. et S.-G.

The larger size and lighter colour below induced me to separate the Mexican from the Guatemalan form of this species; but I rather doubt whether the separation will be ultimately maintainable, as there is considerable variation in *G. guatemalensis* when a large series is examined.

4. GRALLARIA GUATEMALENSIS.

Grallaria guatemalensis, Prévost, Zool. Voy. Vénus, Ois.

pl. 2; Scl. et Salv. Ibis, 1859, p. 119, et Nom. Av. Neotr. p. 75; Salvin, Ibis, 1861, p. 354; Scl. Cat. A. B. p. 191.

Chamæza guatemalensis, Bp. Consp. p. 204.

Similis præcedenti, sed crassitie minore, et abdominis colore saturatiore distinguenda: long. tota 7·0, alæ 4·5, caudæ 1·5, tarsi 2·0.

Hab. Guatemala.

Mus. P. L. S. et S.-G.

This Ant-Thrush was obtained by Mr. Salvin in the forests of Vera Paz, in those of Western Guatemala, and also on the slopes of the Volcan de Fuego, where it ascends to a height of 8000 feet above the sea-level. In the young bird the head and breast are blackish, curiously variegated with fulvous centre-spots.

5. GRALLARIA PRINCEPS.

Grallaria guatemalensis, Salvin, P. Z. S. 1867, p. 146.

Grallaria princeps, Scl. et Salv. P. Z. S. 1869, p. 418; Salv. P. Z. S. 1870, p. 196.

Suprà oleaginea, plumis nigro marginatis; pileo et collo postico valdè obscurioribus et cineraceo tinctis; loris et oculorum ambitu rufescentibus; alis obscurè fuscis, extùs et intùs castaneo limbatis; caudâ omnino fuscescenti-castaneâ: subtùs saturate ferruginea, pectore paulo obscuriorè, gutturis medii plumis nigro variegatis; rostro obscurè corneo, mandibulæ basi albicante; pedibus corylinis: long. tota 6·5, alæ 4·3, caudæ 1·7, tarsi 1·9, rostri a rictu 1·3.

Hab. Veragua, Chiriqui (*Arcé*).

Mus. S.-G.

Obs. Similis *G. guatemalensi,* sed rostro robustiore, altiore, colore corporis superi obscuriore, ventris autem rubiginoso saturatiore distinguenda.

6. GRALLARIA REGULUS.

Grallaria regulus, Sclater, P. Z. S. 1860, p. 66, et Cat. A. B. p. 192; Scl. et Salv. Nom. Av. Neotr. p. 196.

Brunnescenti-olivacea, pileo cinerascentiore; dorsi plumis nigro circumcinctis; alis nigricantibus, extùs brunneo limbatis; caudâ brevissimâ, unicolore brunneâ: subtùs saturatè ferruginea, gutture et pectore nigricantiore per-

fusis; torque gutturali pallidè cinnamomeo, hujus plumarum apicibus nigris; tectricibus subalaribus cum ventre concoloribus; rostro corneo, suprà obscuriore; pedibus corylinis; long. tota 6·3, alæ 4·0, caudæ 1·2, tarsi 1·6.

Hab. Æquatoria et Columbia.

Mus. P. L. S. et S.-G.

Obs. Sp. a *G. principe* crassitie minore, gutture nigricantiore, et abdomine magis flavicante distinguenda.

7. Grallaria haplonota, sp. nov.

Suprà olivacea, ferè unicolor, pileo vix cinerascentiore et plumarum marginibus angustissimis nigricantibus; caudâ rufescente: subtùs fulva, in pectore et lateribus olivaceo adumbrata; gulâ mediâ albicante, torque colli angusto et lateribus gulæ indistinctè nigricantibus; subalaribus et crisso castaneis: long. tota 7·3, alæ 4·2, caudæ 1·5, tarsi 1·8.

Hab. Venezuela.

Mus. P. L. S. et S.-G.

My diagnosis of this apparently new species is from an example obtained in Venezuela by Mr. Spence. Salvin and Godman's single specimen is likewise Venezuelan, having been procured in the wood-region of the coast near Puerto Cabello by Mr. Goering in 1873. The uniform dark olive-colour of the back renders it easily distinguishable from its allies; but it is otherwise nearly related to *G. regulus.*

8. Grallaria varia.

Le roi des Fourmilliers de Cayenne, Buff. Pl. Enl. 702.

Formicarius varius, Bodd. Table d. Pl. Enl. p. 44.

Turdus rex, Gm. S. N. i. p. 828.

Turdus grallarius, Lath. Ind. Orn. i. p. 361.

Grallaria fusca, Vieill. Gal. Ois. pl. 154; Tsch. Faun. Per. p. 181.

Pitta grallaria, Temm. Pl. Col. sub tab. 217.

Myioturdus rex, Ménétr. Mon. Myioth. p. 462.

Grallaria varia, Gray, Gen. i. p. 213; Scl. P. Z. S. 1858, p. 280, et Cat. A. B. p. 192; Pelz. Orn. Bras. p. 91; Scl. et Salv. Nom. Av. Neotr. p. 75.

Colobathris rex, Cab. Orn. Not. p. 217.

Grallaria rex, Lafr. Rev. Zool. 1842, p. 333; Bp. Consp. p. 204.

Suprà olivacea, pileo cineraceo, plumarum marginibus angustis nigris, scapis clarè fulvis; caudâ rufâ; loris, mystacibus et maculis quibusdam in gulâ mediâ albis; gutture brunneo, albo striolato; abdomine sordidè albo, brunneo variegato; ventre medio et crisso cum subalaribus pallidè fulvis: long. tota 7·5, alæ 4·6, caudæ 1·7, tarsi 2·0.

Hab. Cayenna et Guiana.

My diagnosis of this species, which is scarce in collections, is taken from an example kindly lent to me by Mr. John Trotter, who has recently procured it in Demerara. Natterer obtained an example of this bird at Marabitanas, Rio Negro.

9. GRALLARIA IMPERATOR.

Myioturdus rex, Max. Beitr. iii. p. 1027.

Grallaria rex, Burm. Syst. Ueb. iii. p. 50.

Myiothera grallaria, Licht. Doubl. p. 43.

Grallaria imperator, Lafr. Rev. Zool. 1842, p. 333; Sclater, P. Z. S. 1858, p. 280, et Cat. A. B. p. 191; Scl. et Salv. Nom. Av. Neotr. p. 75; Bp. Consp. p. 204.

Colobathris imperator, Cab. Orn. Not. i. p. 217.

Myiotrichas imperatrix, Cab. et Hein. Mus. Hein. ii. p. 6.

Suprà olivacea, nuchâ cineraceâ, plumis nigro limbatis et lineis scapas occupantibus fulvis ornatis; caudâ rufâ; loris et mystacibus latis et maculâ cervicali albis; gutture nigro; abdomine sordidè albo, fulvo mixto, et nigricante frequenter transfasciolato; subalaribus et crisso lætè fulvis; rostro corneo, pedibus rubellis: long. tota 8·0, alæ 4·9, caudæ 1·7, tarsi 1·9.

Hab. Brasilia merid.-orientalis.

Mus. P. L. S. et S.-G.

This is at least a well-marked species, easily distinguished from most of the other forms of this section, as here described, by its black throat, conspicuous white neck-spot, and the strong black edgings to the upper plumage. It comes nearest to *G. varia,* but may be recognized by its black throat and larger size.

Sect. C. GRALLARIÆ UNIFORMES.

10. GRALLARIA NUCHALIS, Sclater, P. Z. S. 1859, p. 441, et Cat. A. B. p. 192; Scl. et Salv. Nom. Av. Neotr. p. 75.

Saturatè brunnescenti-oleaginea, pileo rufescentiore, nuchâ et regione postoculari clarè castaneis: subtus nigricanti-schistacea; remigum marginibus internis fulvo-rufis; rostro et pedibus nigris: long. tota 7·5, alæ 4·5, caudæ 2·1, rostri a rictu 1·2, tarsi 2·15.

Hab. Æquadoria.

Mus. P. L. S. et S.-G.

Since I described this species I have obtained a second example, not quite mature, from the vicinity of Quito. Messrs. Salvin and Godman have a specimen from the same district.

11. GRALLARIA RUFICEPS. (Plate VIII.)

Grallaria ruficeps, Scl. P. Z. S. 1873, p. 729.

Suprà brunnea, pileo toto et capitis lateribus ferrugineo-rufis: subtus cinerea; subalaribus et remigum pogoniis internis cervinis; rostro nigro, pedibus corylinis: long. tota 8, alæ 4·5, caudæ 2, tarsi 2·5.

Hab. Status Antioquiæ, reipubl. Columbianæ.

Mus. P. L. S. et S.-G.

We are indebted to Mr. T. K. Salmon for the discovery of this fine species, of which a figure is now given, taken from the typical specimen.

12. GRALLARIA MONTICOLA.

Grallaria monticola, Lafr. Rev. Zool. 1847, p. 68; Des Murs, Icon. Orn. pl. 53; Sclater, P. Z. S. 1858, p. 281, et Cat. A. B. p. 192; Scl. et Salv. Nom. Av. Neotr. p. 75.

Chamæza monticola, Bp. Consp. p. 204.

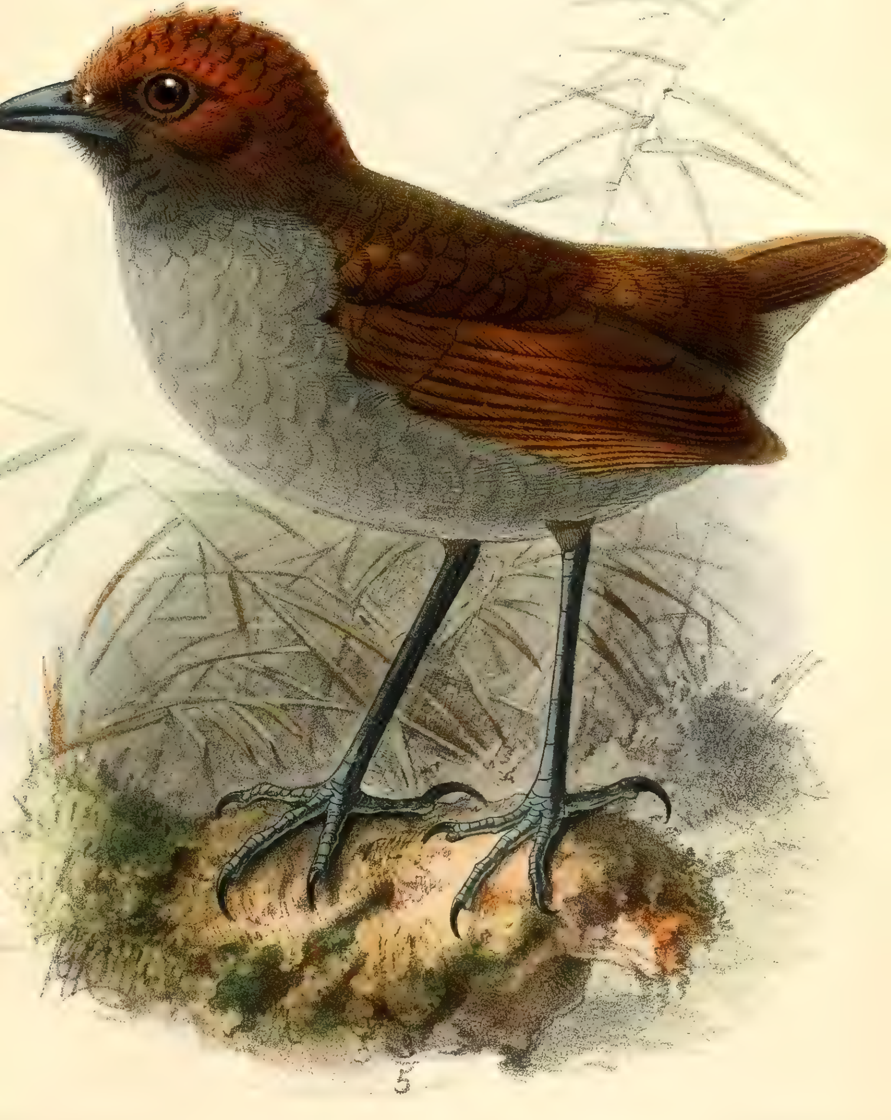
Grallaria quitensis, Less. (ubi ?).

Suprà olivaceo-brunnea cineraceo adumbrata, uropygio fulvescente; loris, superciliis et corpore toto subtùs pallidè flavicanti-fulvis olivaceo mixtis; subalaribus et remigum marginibus internis clarè cervinis; rostro nigro, pedibus corneis: long tota 6·5, alæ 4·0, caudæ 2·0, rostri a rictu 1·2, tarsi 2·0.

Hab. Montes reipubl. Æquatorianæ.

Mus. P. L. S. et S.-G.

This species seems to be common in the Andes of Ecuador,



G.Keulemans lith.

M&N Hanhart imp.

GRALLARIA RUFICEPS

AMERICAN MUSEUM
CENTRAL PARK,
NEW YORK.
OF NATURAL HISTORY.

but not to be found far outside the limits of that republic. I have specimens obtained near Pasto by Delattre, and on Pichincha by Fraser. Mr. Buckley has recently transmitted several skins of it from Sical in Ecuador.

13. GRALLARIA FLAVOTINCTA, sp. nov. (Plate IX.)

Suprà, inclusis capitis lateribus, saturatè brunnea ferè unicolor: subtùs sordidè alba, in ventre medio clarior, gutture toto flavescenti perfuso; hypochondriis, tibiis et crisso dorso concoloribus; subalaribus fulvis; rostro et pedibus nigris: long. tota 6·8, alæ 3·6, caudæ 1·5, rostri a rictu 1·2, tarsi 1·9.

Hab. St. Antioquiæ in republ. Columbianâ.

Mus. P. L. S.

Obs. Sp. formâ et crassitie *G. monticolæ,* sed colore suprà saturatiore et gutture flavescente prorsùs dignoscenda.

This is another discovery of Mr. T. K. Salmon since his recent return to Medellin. The single example sent, marked male, was obtained near Frontino, in Antioquia, in 1876.

14. GRALLARIA ERYTHROLEUCA.

Grallaria erythroleuca, Scl. P. Z. S. 1873, p. 783.

Suprà lætè rufa, pileo et lateribus capitis cum caudâ saturatioribus, ferrugineis: subtus gutture et ventre medio albis, pectore et lateribus dorso concoloribus, plumis quibusdam albo angustè terminatis; subalaribus ferrugineis, remigum pogoniis internis schistaceis, ferrugineo vix marginatis; rostro et pedibus corneis: long. tota 7·2, alæ 3·6, caudæ 2, tarsi 2·1.

Hab. Peruvia alta, Huasampilla (*Whitely*).

Mus. P. L. S.

This is a very well-marked species, readily recognizable by the chestnut colour of the body above, which extends onto the breast and flanks.

15. GRALLARIA ERYTHROTIS.

Grallaria erythrotis, Scl. et Salv. P. Z. S. 1876, p. 357.

Suprà obscurè olivacea, cinereo tincta: subtus valdè dilutior et rufescenti lavata, ventre medio pænè albo; regione auriculari totâ vivide rufâ, fronte et superciliis hôc colore tinctis; rostro nigro, ad apicem albicante, pedibus clarè corylinis: long. tota 6·0, alæ 3·5, caudæ 2·0, tarsi 2·0.

Hab. Prov. Yungas, Bolivia.

Mus. P. L. S. et S.-G.

This species is easily known by the red colour being confined to the sides of the head.

16. GRALLARIA HYPOLEUCA.

Grallaria hypoleuca, Scl. P. Z. S. 1855, p. 88, 1858, p. 281, et 1868, p. 575.

G. suprà ferruginea, loris albidis: subtus alba, lateribus magis cinerascentibus; tibiis et hypochondriis brunnescentibus: long. tota 6·5, alæ 3·5, caudæ 1·8.

Hab. Columbia int. (Bogota) et Æquatoria.

Mus. P. L. S. et S.-G.

Mr. Buckley has recently transmitted a skin of this well-marked species from San José, near Cuenca, in Ecuador. My specimen is of the usual "Bogota" make.

17. GRALLARIA GRISEONUCHA.

Grallaria griseonucha, Scl. et Salv. P. Z. S. 1870, p. 786.

Suprà rufescenti-brunnea, alis intùs nigricantibus, loris et nuchâ latâ obscurè griseis; colli lateribus et corpore subtùs intensè ferrugineis, lateribus obscurioribus; caudâ brevissimâ, subcaudalibus absconditâ; rostro et pedibus obscurè corneis: long. tota 6, alæ 3·5, caudæ 1, tarsi 1·9, rostri a rictu 1.

Hab. Merida in rep. Venezuelanâ.

Mus. P. L. S.

This is likewise a very distinctly marked species. Its cinereous nape and deep-red under plumage render it quite distinct from all its congeners.

18. GRALLARIA RUFULA.

Grallaria rufula, Lafr. Rev. Zool. 1843, p. 99; Sclater, P. Z. S. 1855, p. 145, 1858, p. 283, 1873, p. 780, et Cat. A. B. p. 193; Scl. et Salv. Nom. Av. Neotr. p. 76.

Hypsibemon rufulus, Cab. Orn. Not. p. 218; Bp. Consp. p. 204.

Obscurè ferruginea, ferè unicolor, subtus dilutior, ventre medio interdum albicante; rostro corneo, pedibus corylinis: long. tota 5·0, alæ 3·1, caudæ 1·1, tarsi 1·7.

Hab. Columbia int. et Peruvia.

Mus. P. L. S. et S.-G.

Peruvian skins of this species from Cachupata (*Whitely*) are rather duller above, and show less of the paler colour of the abdomen; but I cannot undertake to separate them from the Columbian form.

From the skin of an immature bird (from Bogota) in my collection the young plumage of this species would appear to be of a blackish grey, with long white shaft-spots.

Sect. D. GRALLARIÆ FLAMMULATÆ.

19. GRALLARIA RUFICAPILLA.

Grallaria ruficapilla, Lafr. Rev. Zool. 1842, p. 333; Sclater, P. Z. S. 1855, p. 145, 1857, p. 18, et 1858, p. 282, et Cat. A. B. p. 192; Scl. et Salv. P. Z. S. 1870, p. 781, et Nom. Av. Neotr. p. 75.

Hypsibemon ruficapillus, Cab. Orn. Not. i. p. 217; Bp. Consp. p. 204.

Olivaceo-brunnea, pileo toto et lateribus capitis castaneo-rufis: subtus alba, pectore et lateribus nigricanti-brunneo flammulatis; subalaribus pallidè rufis: long. tota 8·0, alæ 4·0, caudæ 2·0, tarsi 1·9.

Hab. Venezuela, Columbia et Æquatoria.

Mus. P. L. S. et S.-G.

This fine and well-marked species has a wide distribution. Goering obtained it in the wood-region of Merida, Salmon in Antioquia, and Buckley more recently in Ecuador. It is also not uncommon in collections from Bogota and Quito. There is no apparent difference in skins from these several localities.

A nestling of this species (*Mus. S.-G.*) is of a nearly uniform pale fulvous, crossed above and on the chest with numerous transverse bars; throat and lower belly white; wings and tail olivaceous. It is a most singular-looking bird.

20. GRALLARIA BREVICAUDA.

Le Beffroi de Cayenne, Buff. Pl. Enl. 706. fig. 1.

Formicarius brevicauda, Bodd. Table d. Pl. Enl. p. 44.

Turdus tinniens, Gm. S. N. i. p. 827.

Grallaria tinniens, Bp. Consp. p. 204; Burm. Syst. Ueb. iii. p. 51; Lafr. Rev. Zool. 1842, p. 334; Tsch. Faun. Per. p. 182.

Grallaria brevicauda, Sclater, P. Z. S. 1855, p. 89, et 1858, p. 282; Cat. A. B. p. 192; Scl. et Salv. P. Z. S. 1867, p. 978, 1876, p. 277, et Nom. Av. Neotr. p. 75; Pelzeln, Orn. Brasil. p. 91.

Colobathris tinniens, Cab. Orn. Not. i. p. 217.

Myioturdus tinniens, Ménétr. Mon. Myioth. p. 469.

Pitta tiniens, Temm. Pl. Col. sub tab. 217.

Cinnamomeo-brunnea: subtùs alba, griseo flammulata; gula et ventre medio immaculatis, albis; subalaribus pallidè rufis: long. tota 5·0, alæ 3·3, caudæ 1·3, tarsi 1·8.

Hab. Cayenna et vallis Amazonum usque ad Æquatoriam et Peruviam orientalem.

Mus. P. L. S. et S.-G.

I have examples of this species from Cayenne and Eastern Ecuador, and an immature specimen, apparently of "Bogota" make. Hauxwell has transmitted it from Pebas, and Bartlett from Chamicuros, while Castelnau and Deville obtained it on the Rio Javari; so that it is certainly widely distributed over the Amazonian subregion.

21. GRALLARIA MODESTA.

Grallaria modesta, Sclater, P. Z. S. 1855, p. 89, pl. 94, et p. 145; 1858, p. 281; List Bog. B. p. 17; Scl. et Salv. Nom. Av. Neotr. p. 75.

Suprà intensè brunnescenti-olivacea, alis caudâque nigricanti-brunneis olivaceo tinctis: subtùs olivacea, flavescenti-albido flammulata; ventre medio flavescenti-albido; tectricibus subalaribus pallidè castaneis; mandibulâ superiore plumbeâ, hujus apice et tomiis et mandibulâ inferiore, nisi basi, albicantibus; pedibus pallidè brunneis: long. tota 6·2, alæ 3·2, cauda 1·8, tarsi 1·75.

Hab. Columbia int. Bogota.

The type in the British Museum is the only example that I have yet met with of this well-marked species.

22. GRALLARIA ANDICOLA.

Grallaria andicola, Cab. Journ. f. O. 1873, p. 318, tab. i. fig. 3; Tacz. P. Z. S. 1874, p. 531.

Suprà fusca, in capite cervice posticâ et interscapulio striis, scapas plumarum occupantibus, pallidè fulvis utrinque nigro limbatis, variegata: subtùs alba, nigro squamata,

loris, gulâ mediâ et ventre imo ferè unicoloribus; subalaribus et remigum marginibus internis pallidè rufis: long. tota 5·0, alæ 3·5, caudæ 1·7, tarsi 1·8.

Hab. Peruvia interior.

Mus. P. L. S.

I am much indebted to Dr. Taczanowski for a duplicate example of this peculiar species, which was discovered near Maraynioc, Peru, by Mr. Jelski in 1873.

23. GRALLARIA PERSPICILLATA.

Grallaria perspicillata, Lawr. Ann. L. N. H. N. Y. vii. pp. 303 et 326; Scl. et Salv. P. Z. S. 1864, p. 357, et Nom. Av. Neotr. p. 76; Salv. P. Z. S. 1867, p. 146, 1870, p. 196.

Suprà olivaceo-brunnea, pileo supero cineraceo; interscapulii striis paucis, tectricum maculis apicalibus, campterio et remigum primariorum marginibus externis pallidè fulvis: subtùs alba, in pectore et lateribus fulvo tincta et nigro conspicuè flammulata; subalaribus et remigum marginibus internis fulvis; rostro superiore corneo, inferiore cum pedibus flavis; long. tota 4·5, alæ 3·0, caudæ 1·3, rostri a rictu 1·0, tarsi 1·3.

Hab. Panama et Veragua.

Mus. P. L. S. et S.-G.

Messrs. Salvin and Godman's collection contains a good series of this species from Veragua (*Arcé*) and Panama (*M'Leannan*). I have an example from Panama, kindly presented to me by Mr. G. N. Lawrence. It is certainly nearly allied to the next two species, but is much more strongly marked on the breast, and has distinct rufous terminal spots on the wing-coverts. A single skin from Costa Rica (*Mus. S.-G. ex Carmiol*) is remarkable for having the back grey, like the head, and the flanks strongly fulvous. It is perhaps distinct.

24. GRALLARIA MACULARIA.

Pitta macularia, Temm. sub Pl. Col. tab. 217.

Colobathris macularia, Cab. Orn. Not. p. 217, et in Schomb. Guian. iii. p. 685.

Grallaria macularia, Lafr. R. Z. 1842, p. 334; Burm. Syst. Ueb. iii. p. 50; Bp. Consp. p. 204; Scl. P. Z. S. 1858, p. 282; Pelzeln, Orn. Bras. p. 91: Scl. et Salv. Nom. Av. Neotr. p. 75.

Olivaceo-brunnea, alis extùs rufo variis, remigibus extùs rufis: subtùs alba, pectore confertim nigro maculato; lateribus ochraceis; regione auriculari nudiusculâ; ungue postico brevi et valido: long. tota 5·4, alæ 3·4, caudæ 1·3, tarsi 1·4.

Hab. British Guiana (*Schomb.*), Rio Negro (*Natt.*).

Mus. P. L. S.

My single specimen of this species is not very perfect; and I cannot say any thing very positive about it. It is believed to have been obtained at Oyapok, Cayenne, by M. Jelski.

25. Grallaria fulviventris.

Grallaria fulviventris, Sclater, P. Z. S. 1858, pp. 68, 282, et Cat. A. B. p. 192; Scl. et Salv. Nom. Av. Neotr. p. 76.

Olivaceo-brunnea, pileo obscuriore, alis extus magis rufescentibus, loris albidis: subtùs gulâ et abdomine medio albis; pectore, ventris lateribus et crisso cum tectricibus alarum inferioribus saturatè fulvis; pectore lineis quibusdam nigris variegato; rostro superiore nigro, inferiore præter apicem flavo; pedibus pallidè brunneis: long. tota 5·5, alæ 3·2, caudæ 1·4, tarsi 1·5, rostri a rictu 0·95.

Hab. Æquatoria occidentalis.

Mus. P. L. S.

I am at present uncertain whether this species is really separable from the preceding. My single specimen is darker on the back and rather longer in the leg than that of *G. macularia*, and has but few indications of the black markings on the breast. In general size there is little difference.

26. Grallaria dives.

Grallaria dives, Salv. P. Z. S. 1864, p. 582; Lawr. Ann. L. N. H. N. Y. viii. p. 183; Scl. et Salv. Nom. Av. Neotr. p. 76.

G. suprà pileo et dorso cinereis, plumis omnibus nigro marginatis; uropygio obscurè olivaceo; remigibus extùs rufis; gulâ et ventre medio albis; loris pallidè ochraceis; pectore, corporis lateribus, crisso et tectricibus subalaribus saturatè fulvis, pectoris plumis nigro marginatis; ungue postico longo et gracili; rostri mandibulâ superiore brunneâ, inferiore albidâ, apice brunneâ; pedibus pallidè fuscis: long. tota 5·5, alæ 3·1, caudæ 1·4, tarsi 1·5, rostri a rictu 1.

Hab. Costa Rica (*Arcé*); Nicaragua (*Holland*).

Mus. S.-G.

The two type specimens of this species are the only examples I have yet seen. They were collected by Arcé in 1864, at Tucurriqui, on the Atlantic slope of Costa Rica. The species is included by Mr. Lawrence in a list of birds obtained near Greytown.

This *Grallaria* is nearest to *G. fulviventris,* but is greyer on the back, has the outer margins of the primaries rufous and the lores fulvous, instead of white.

27. GRALLARIA OCHROLEUCA.

Myioturdus ochroleucus, Max. Beitr. iii. p. 1032; Ménétr. Mon. p. 464.

Grallaria ochroleuca, Sclater, P. Z. S. 1858, p. 282; Pelzeln, Orn. Bras, p. 91; Scl. et Salv. Nom. Av. Neotr. p. 76.

Similis *G. maculariæ,* sed rostro multo angustiore et magis compresso, maculis externis tectricum nullis; maculis solum in lateribus pectoris et ventris, et his minoribus et rotundis; ungue postico gracili, elongato; oculorum ambitu nudo: long. tota 5·5, alæ 3·0, caudæ 1·5, tarsi 1·4.

Hab. Prov. Bahia, Brazil (*Max.*); S. Paulo (*Natt.*).

Some years ago I took the above notes from an example of this species in the Leyden Museum. I have never yet been able to obtain one for my own collection, nor have I seen the species elsewhere.

XXXIX.—*Note on the* Pellorneum tickelli *of Blyth.* By ARTHUR, Marquis of TWEEDDALE, M.B.O.U.

(Plates X., XI.)

SINCE I addressed a letter relating to this species to the Editors of 'The Ibis' on the 26th of April (*v. s.,* p. 385), I have received from Tenasserim specimens of true *Pellorneum tickelli,* obtained at Meetan by Mr. Limborg. These have been compared by Lieut.-Col. Godwin-Austen with Blyth's types, still extant in the Calcutta Museum, and identified by him as belonging to Blyth's species. These examples enable me to state that Blyth's identification of *P. tickelli* with *P. subochraceum,* Swinhoe (B. of Burma, no. 359), is erroneous. I am unable even to class *P. tickelli* under the genus *Pellor-*

neum, although in his original description (J. A. S. B. 1859, p. 414) Blyth described it as being a typical *Pellorneum* in structure. It seems to me to fall more nearly under the genus *Drymocataphus*. On comparing the type of *Drymocataphus fulvus*, Walden (Ann. & Mag. N. H. ser. 4, xv. p. 401), with true *P. tickelli*, I find that my species cannot be specifically separated. And I observe that Mr. Hume (Str. Feath. 1877, p. 59) expresses an almost confident opinion that *D. fulvus*, Walden, = *Trichostoma minus*, Hume, in which case *T. minus* will also become a synonym of *D. tickelli*, and not, as I had suggested (Blyth, B. Burma, no. 366), of *Trichostoma abbotti*.

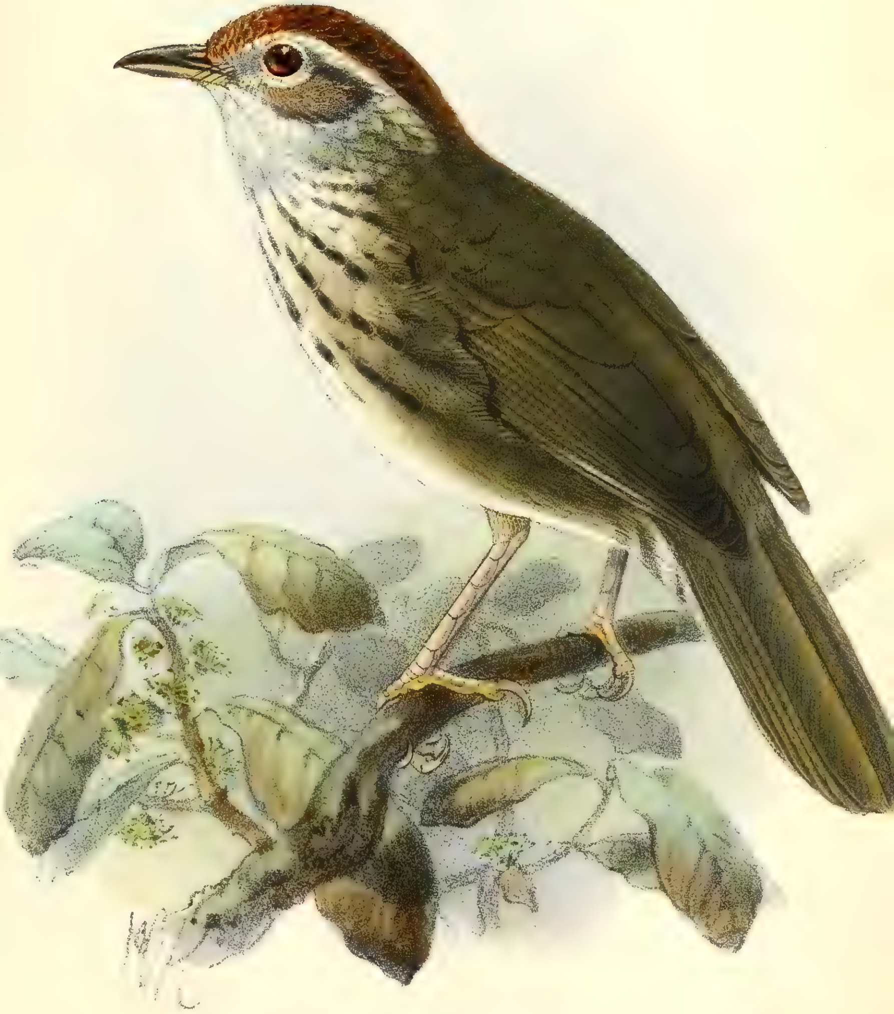
The figure (Plate X.) of *Pellorneum subochraceum*, Swinh., = *Pellorneum minus*, Hume, is taken from an example obtained by Lieutenant Wardlaw Ramsay on the Karen hills; and examples of this species collected by Mr. Limborg above Meetan do not differ.

The figures of *Drymocataphus tickelli* (Plate XI. f. 1) and of *Trichostoma abbotti* (Plate XI. f. 2) are from Tenasserim examples, obtained by Mr. Limborg.

XL.—*Notes on some Burmese Birds.* By Lieutenant WARDLAW RAMSAY, 67th Regiment, M.B.O.U.

(Plates XII., XIII.)

THE following remarks, which are partly extracts from my note-book kept during a three years' residence in Burma, I venture to publish. As Mr. A. O. Hume, in his "List of the Birds of Upper Pegu" (S. F. ii. p. 1), and Mr. Oates (S. F. iii. p. 335) have already contributed copious notes on the birds of Burma, derived from various sources, I have endeavoured as much as possible to avoid repetition of facts which have already been made known by these gentlemen and other writers. A few ornithological occurrences have come under my notice which I cannot find recorded elsewhere; and some of these may prove of interest to readers of 'The Ibis.'



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PELLORNEUM SUBOCHRACEUM

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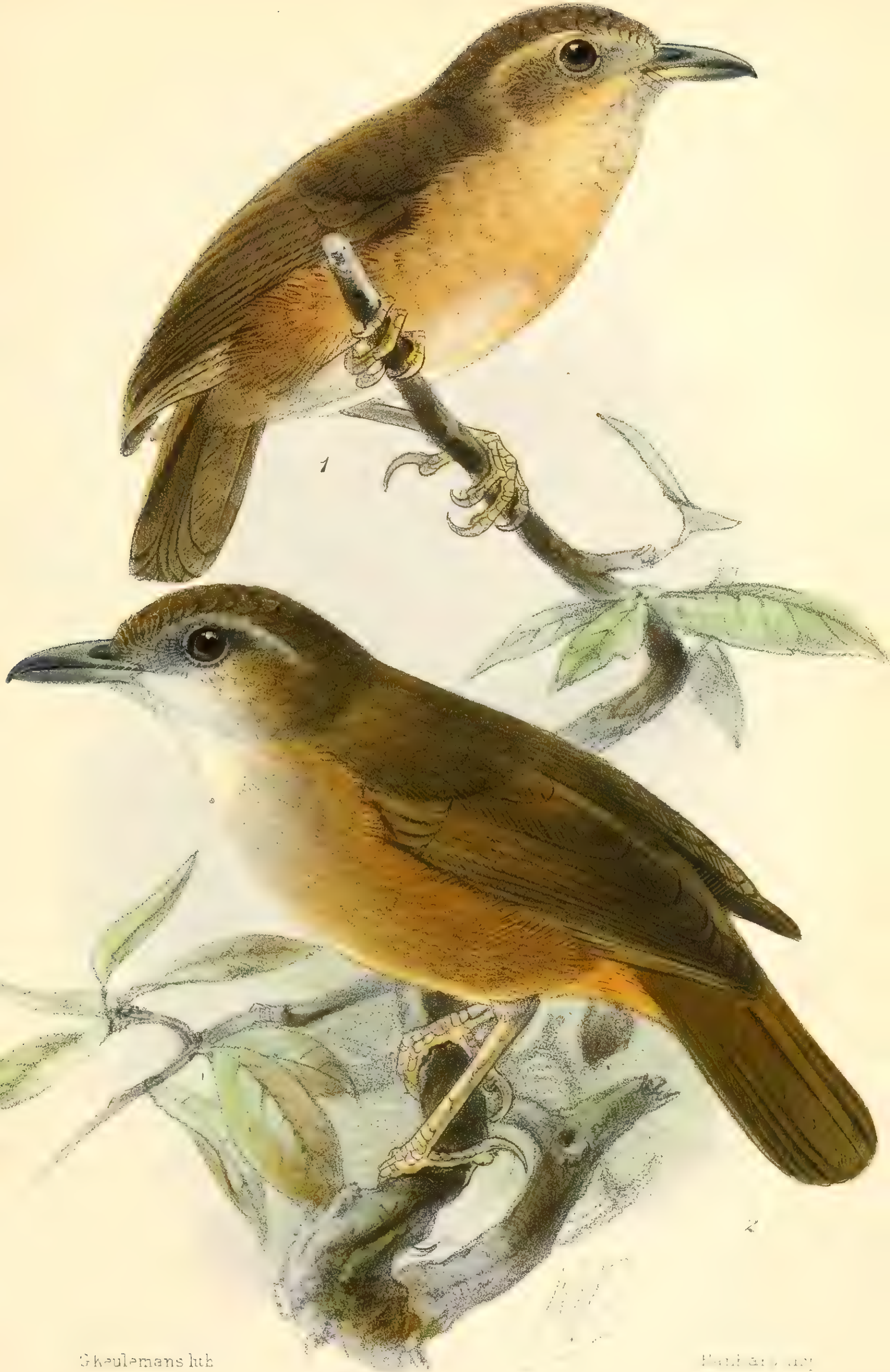

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1. DRYMOCATAPHUS TICKELLI
2. TRICHOSTOMA ABBOTTI.

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1*. PALÆORNIS MAGNIROSTRIS.

Palæornis magnirostris, Ball.

Far from being a mountain species in Burma, as stated by Blyth (J. A. S. B. 1875, extra number, p. 54), it is rather scarce in the hills, ascending to no great elevation; but it is found in vast numbers in the plains; at least such is my experience in the Tonghoo and Rangoon districts.

About the middle of October they invade gardens where there happen to be guava trees in fruit, by hundreds, and make a terrible noise.

2. PALÆORNIS TORQUATUS.

I only once met with this Parakeet, and then on the lower slopes of the Karen hills. It must be rare, although I can give no reason for its being so.

6. PALÆORNIS MELANORHYNCHUS.

Palæornis melanorhynchus, Wagler.

The allied species which Mr. Blyth mentions (J. A. S. B. 1875, p. 57), from the Tenasserim provinces, must have been founded on females of the common red-breasted Parakeet. In a large series of some sixty or seventy specimens from India, the Andaman Islands, the Tenasserim provinces, and other parts of British Burma, all the females (whose sex has been so determined) are in the plumage which Blyth describes as that of the allied race, but none of the males, with one exception, a black-billed adult, marked "male" by Mr. Limborg. This specimen being the only adult male with both mandibles black out of a very large series, inclines me to think that Mr. Limborg's determination was incorrect. From Blyth's statement (p. 58) it would appear that he had never seen males of his allied race; for he surmises that the male will be found to possess a coral-red maxilla.

12. TINNUNCULUS ALAUDARIUS.

The Kestrel is very abundant in Karen-nee, where the rocky precipices afford it good nesting-places. It is by no means common in the plains.

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* The numbers are those of Blyth's Catalogue (J. A. S. B. 1875).

14. POLIOHIERAX INSIGNIS.

Poliohierax insignis, Walden, P. Z. S. 1871, p. 627.

This beautiful species is rare at Tonghoo, whence the type came. I only once met with it during a space of two years.

20. SPILORNIS CHEELA.

The Crested Serpent-Eagle is a very common bird in Burma; its melancholy whistle may be heard in every jungle on the plains. Nearly all that I have killed have had the remains of snakes in their stomachs. At the Andaman Islands I killed a specimen of *Spilornis elgini*, which was sitting on a mangrove stump in a tidal swamp. It had tried to swallow a snake, but apparently had failed; for about four inches of the snake's body was hanging out of its mouth, whilst the part which had passed into the stomach was almost digested.

ACCIPITER NISUS.

I only once obtained the European Sparrow-Hawk at Tonghoo. Mr. J. H. Gurney and Lord Tweeddale have seen the specimen and confirmed my identification. It is apparently an old female.

45. MILVUS GOVINDA.

The Pariah Kites are only found in Tonghoo during the dry season, arriving at the termination of the rains, and leaving at the first burst of the next south-west monsoon.

I regret that, not having preserved specimens, I am unable to say whether I am right in referring the Tonghoo bird to *M. govinda*, Sykes.

58. ASIO ACCIPITRINUS.

I obtained one specimen of the Short-eared Owl at Tonghoo.

59. ATHENE CUCULOIDES.

Very common in most parts of the plains that I have visited, especially at Rangoon. Its note is sometimes not unlike that of *Xantholæma hæmacephala*.

68. DICHOCEROS BICORNIS.

(Burmese "Ouk-chin-gyee.")

The large Hornbill is very common in the Tonghoo district, and found in pairs or parties of five or six, but frequently in considerable flocks. Its hoarse croak may be heard at a distance of more than half a mile. At a place called Hmōn, on the Sittang river, in January 1874, I found it very abundant and, for a wonder, very tame, so that I was able to secure seven fine specimens in the course of an hour by waiting under a large banyan tree, to which the birds were continually coming to feed on the ripe fruit. Some of the birds I shot had seven or eight banyan fruits clasped between the mandibles on either side. This tree was also the resort of numbers of *Crocopus viridifrons,* of which more than a dozen fell to my gun within the hour.

At Tonghoo, towards the end of the hot weather (April), these birds pass over the cantonments in straggling flocks every morning and evening, going to and returning from their feeding-grounds. I have frequently seen forty or fifty of this species in a single flock.

The iris of the male is lake-red, that of the female greyish white, and of an immature male brown.

69. HYDROCISSA ALBIROSTRIS.

The Pied Hornbill is extremely common, but never seen in such large parties as the last species, with which it sometimes, but rarely, associates.

I kept a pair alive for many months at Tonghoo: they used to fly about the house and garden, and frequently would alight on the shoulder of a small native boy who was in the habit of feeding them. They were extremely partial to dead snakes. On one occasion I found them on the ground, each trying to swallow the same snake, one at the head and the other at the tail. The usual method of procedure, however, was to munch the snake until it was reduced to a sufficiently ragged and pulpy condition to admit of its being torn into small pieces and so swallowed.

72. RHYTICEROS SUBRUFICOLLIS.

Buceros subruficollis, Blyth, J. A. S. B. xii. p. 177.

This is a local but, where found, abundant species. These birds are to be seen in the same manner as *D. bicornis,* but in far larger flocks, flying to and returning from their feeding-places at dawn and dusk. One of my specimens (immature), from its large size, may be *R. undulatus* (Shaw) (*Buceros ruficollis,* Bl., J. A. S. B. xii. p. 176), which appears to differ from the present bird only in its slightly superior size, and in having when adult a ribbed plate on either side of the base of the mandible, which does not exist in the immature bird.

An old Burman one day brought me a lump of earthy composition which he had taken from the nest-hole of a Hornbill, and told me that he had been attracted to the nest by seeing the bird thrust out its bill and snap at a large iguana which was running up the tree. The Burmese have an idea that the plaster which the birds use for shutting up the entrance to their nest-holes is made of earth brought from the four quarters of the globe and mixed with a gum extracted from trees. This composition is much thought of for its supposed medicinal properties; but in what way it is used I was unable to discover. The Burmese have endless legends about the Hornbill; and in their poetry and plays the name is continually occurring. The female Hornbill is regarded by the Burmese as the model of virtue. Iris (♂), lake; bill greenish white, with ridges cream-colour and furrows earthy; base of bill and ribbed part of maxilla vinous brown; facial skin and a rim round the eye also vinous brown, but brighter; eyelids pale greenish; skin of the throat bright lemon-yellow; legs black.

The female has the gular pouch turquoise-blue.

75. Carcineutes pulchellus.

In the Madras Museum is a specimen labelled "Burmah" which has the rufous collar nearly half an inch broad.

78. Halcyon pileata.

Extends only a very short distance up the Sittang from the sea; it is unknown in the Tonghoo district.

79. Halcyon coromanda.

I never saw the Ruddy Kingfisher in the Tonghoo district; but the late lamented Lieut. Colonel Lloyd, who has contributed so largely to our knowledge of Burmese birds, obtained specimens in the hills, which, unfortunately, were lost, together with a valuable collection, in transit to Lord Tweeddale's residence at Chislehurst.

83. ALCEDO BENGALENSIS.

I found a nest in the side of an old well in some thick jungle near Rangoon, at about five feet from the surface; it contained seven eggs.

A specimen shot at Tonghoo in October has a broad but faint pectoral band of dull blue feathers.

88. EURYSTOMUS ORIENTALIS.

I never saw this bird in Burma until the month of April 1875, when descending the western slopes of the Karen hills, at an elevation of about 700 feet. I afterwards found them common at about 2000 feet. The birds may, however, be considered generally scarce.

94. MEGALÆMA MARSHALLORUM.

This large Barbet is very common in the Karen hills, and very noisy, keeping up its call almost incessantly during the night at certain seasons. Iris hair-brown; bill dull yellow, tinged with green, culmen blackish; legs dusky green.

96. MEGALÆMA ASIATICA.

98. MEGALÆMA RAMSAYI.

Megalæma ramsayi, Walden, Ann. & Mag. N. H. ser. 4, xv. p. 400, June 1875.

These two species are very common in the hills, where they take the place of *M. hodgsoni,* so abundant in the plains.

104. ALOPHONERPES PULVERULENTUS.

This large Woodpecker is extremely common in the wooded country between Tonghoo and the Pegu Yoma range. I have seen as many as twelve in one tree. *Gecinus erythropygius* also has a habit of going about in flocks; for I have seen as many as nine or ten following one another out of a tree, after the manner of the Chatterers (*Garrulax*).

The Slaty Woodpecker is found up to a considerable elevation in the Karen hills, unlike *Thriponax crawfurdi,* which I have never seen except on the plains.

131. YUNX TORQUILLA.

Arrives in October, and remains throughout the cold season, both in the hills and plains.

135. CUCULUS CANORUS.

The European Cuckoo is abundant on the open tableland of Karen-nee, but, as far as I know, does not occur in the plains. Mr. Hume, however, has received it from Prome (S. F. iii. 78).

138. CACOMANTIS RUFIVENTRIS.

The Rufous-bellied Cuckoo is a very common bird in the plains and at moderate elevations in the hills. In Karen-nee it is especially abundant. In nearly every garden in Tonghoo a pair of these birds are to be found. The note is a long mournful whistle, which is kept up throughout the day and sometimes the greater part of the night.

140. CHRYSOCOCCYX MACULATUS.

A specimen obtained in the Karen hills at 4200 feet has the whole throat, neck, and part of the breast uniform emerald-green like the back.

141. CHRYSOCOCCYX XANTHORHYNCHUS.

Iris lake-red. Bill dull orange, reddish at base and gape. The rim round the eye vermilion. Legs dull olive-green.

Karen-nee, 1600 feet, March 1874; this locality is not given in Blyth's catalogue.

144. COCCYSTES JACOBINUS.

Does not occur as far as I know to the eastward of the Pegu Yoma range.

169. MACROPTERYX CORONATUS.

The following is a description of a young bird shot near Tonghoo:—Plumage above shining dark green, with a faint trace of ashy on the head and back; primaries tipped with white; tertiaries greyish, broadly tipped with white; throat, cheeks, and some of the tips of the feathers of the back of the neck ferruginous; crest dark bottle-green, tipped with rusty white; lower surface ashy, with the feathers dark at the tips.

155. LYNCORNIS CERVINICEPS.

This fine Nightjar is plentiful in the Pegu Yoma hills, where I obtained a considerable series during a march from Thyetmyo to Tonghoo. Whenever the camp was pitched on a cleared place of any size in the jungle, they were sure to be seen at dusk.

163. ACANTHYLIS GIGANTEA.

The specimens which Major Lloyd sent to Lord Tweeddale were obtained in the Karen-nee hills, far beyond the British boundary. I have never seen this Swift in the Tonghoo district.

171. CORVUS SPLENDENS.

Corvus insolens, Hume (S. F. ii. p. 480).

The common Burmese Crow seems to me to have every right to specific distinction; but many ornithologists, Mr. Blyth and Lord Tweeddale among others, have considered it merely a melanoid race of *C. splendens*.

174. DENDROCITTA HIMALAYENSIS.

I obtained two eggs of this species at an elevation of 4200 feet in the Karen hills on the 16th April 1875.

The eggs are described by Mr. A. O. Hume at page 424 of his 'Nests and Eggs of Indian Birds.'

This species is universally distributed in the hills. The note sounds as if the bird first cleared its throat and then whistled a long note through its nostrils.

175. CRYPSIRHINA VARIANS.

Common at Tonghoo and Rangoon. It is very fond of sitting on the telegraph-wires or on the dead branch of a tree, from which it darts at insects like the Bee-eaters.

The irides are pale blue.

176. CRYPSIRHINA CUCULLATA.

Having never in the course of two years' careful observation met with this bird in Burma to the eastward of the Pegu Yoma range, I was under the impression that it did not cross that range, but I find a skin sent by Major Lloyd from Tonghoo in Lord Tweeddale's collection. This specimen, after all, may have been shot in the Thyetmyo district, where it is very common; for Major Lloyd had natives collecting in several parts of Burma.

180. Garrulus leucotis.

Garrulus leucotis, Hume, P. A. S. B. 1874, p. 106.

This beautiful species is a common bird in both the hills and the plains of the Tonghoo district. I first met with it in Karen-nee, not far from the Salween river, at an elevation of about 3500 feet, 100 miles north of where it was first discovered by Mr. Davison.

178. Urocissa magnirostris.

Psilorhinus magnirostris, Blyth (J. A. S. B. 1846, p. 27).

I have compared a very large series of this bird from Burma with nearly as large a series from the Himalayas. Although many of the Burmese specimens have the enormous bill on which Blyth chiefly founded the species, several fine specimens from exactly the same localities have the bill quite as small, if not smaller than Himalayan examples.

The only constant point of difference between the Burmese and Indian birds is in the colouring of the bill, feet, and irides, as pointed out by Mr. Hume on Captain Feilden's authority (S. F. iii. p. 145).

Mr. Blyth, in his original description of *U. magnirostris*, states that it has the wing more richly coloured than *U. occipitalis*; but I have seen a good specimen of the latter bird with plumage in all respects as fine as the best of my Burmese skins.

181. Eulabes intermedia.

Very common in the Tonghoo district, extending far into the plains. Mr. Hume says that Mr. Oates (S. F. iii. p. 152) doubts whether it occurs in the plains on the Thyetmyo side.

186. Acridotheres siamensis.

Acridotheres siamensis, Swinhoe, P. Z. S. 1863, p. 303.

This is the only representative of the genus that I found on the Karen-nee plateau.

197. SARAGLOSSA SPILOPTERA.

This bird is tolerably abundant on the thickly wooded slopes of the Karen hills, where it is generally found in small flocks.

ESTRELDA FLAVIDIVENTRIS.

Estrelda flavidiventris, Wallace, P. Z. S. 1863, p. 495.

Estrilda burmanica, Hume, S. F. iv. p. 484, 1876.

Specimens from Burma are absolutely identical with examples from the islands of Flores and Timor. I have compared birds shot at various seasons in Burma with a large series of Mr. Wallace's skins in the British Museum and in the collection of Lord Tweeddale.

The Yellow-bellied Red Waxbill is very locally distributed in Burma, but, where found, always common. I found it especially so at Yey-tho, near Rangoon, on the Prome road, in some parts of the Pegu plain, and again on the Karen-nee tableland. I have unfortunately no specimens from the latter country; so that I am unable to say to what species they may belong.

Specimens from Saigon are a little smaller than Indian birds, but otherwise identical.

212. CARPODACUS ERYTHRINUS.

The Rose-Finch is found in flocks in the bamboo jungles that have run to seed. In the month of April 1874 I found them particularly abundant at between 1000 and 2000 feet in the Karen hills.

213. EUSPIZA AUREOLA.

These Buntings are found in vast flocks during the cold-weather months. On the Pegu plain in December 1873 they were spread over the ripe padi-fields in such countless numbers that men or boys had to be kept incessantly on the look-out to scare away the birds that alighted. Each look-out man was posted on a raised platform of bamboo, and was provided with a sling and a basket of stones. I have seen these slings used with great effect, several birds being killed by the discharge of a single stone. I saw a boy kill a Heron (*Ardea cinerea*) with a stone from one of these slings. At the end of February 1876 I found these birds very numerous in a seeding bamboo jungle near Pegu.

They migrate northwards in April, soon after the commencement of the hot weather.

In Karen-nee they are also common.

214. Emberiza rutila.

The common Bunting of the higher Karen hills, but also found, but rarely, in the plains of the Tonghoo district.

216. Emberiza pusilla.

Also common enough at all elevations. I obtained a specimen in the Andaman Islands in March 1873.

217. Melophus melanicterus.

I found the Crested Bunting very common in the Karen hills up to 3000 feet, particularly so on the Karen-nee plateau in March 1874. This is by far the commonest Bunting in the Karen-nee country, where the rocky scrub-covered hillsides seem to suit it. It is particularly fond of the neighbourhood of tiny streams covered over with bushes in the open country. Their note, which is uttered on the wing, is a rather pleasing whistle, quite unlike that of any other Bunting.

230. Motacilla luzonensis.

The White-faced Wagtails arrive in Tonghoo in the early part of September, and are then found in considerable flocks on the parade-ground and other open spaces; but after a few days they disperse, and are then invariably to be seen in pairs, male and female, about the rocks and houses. At this period the male has the head and upper parts black; whilst in the female the head is black or grey, or mottled with both colours, but the back always ashy. On examining a very large series, of which the sexes have all been carefully ascertained by myself, it appears that in the months of September and October, although the head of the female is liable to variation in colour, yet its back is invariably ashy, whilst that of the male is black. By the end of the year the head of the female is always grey, of the same colour as the back;

but that of the male is still black, whilst the black of the back becomes mottled with grey in some specimens.

It leaves Burma in April, before the commencement of the rains.

MOTACILLA ALBA.

Lord Tweeddale identified two of my Wagtails as *M. dukhunensis*; but I am unable to detect them in my collection.

Indian examples seem difficult to separate from *Motacilla alba* of Europe. Blyth remarks (Ibis, 1865, p. 49) of this Wagtail, "Like the European *M. alba*, but somewhat larger, and with considerably more white on the wings." Specimens from Spain and Asia Minor, in both summer and winter plumage, have the wing quite as white as examples from Ahmadnagar.

238. HYDRORNIS OATESI.

Hydrornis oatesi, Hume, S. F. i. p. 477.

A common enough bird in the hills. It is perfectly fearless. I have had one hopping about on the ground quite close to me, and turning over the dead leaves in the most unconcerned manner. It is usually found in the evergreen forests.

246. PETROCOSSYPHUS CYANEUS.

Arrives in Tonghoo about the middle of October.

247. OROCETES ERYTHROGASTER.

The Chestnut-bellied Thrush must be added to the Catalogue of the 'Birds of Burma' as I obtained a specimen from the hills in January 1876.

255. OREOCINCLA DAUMA.

Both this bird and *O. mollissima* occur at Tonghoo and in the hills. I obtained it at 5000 feet in April.

263. CYANECULA SUECICA.

I obtained two specimens in the Pegu plain in December 1873.

313. GARRULAX PECTORALIS.

The commonest Chatterer of Karen-nee, where I never saw or shot *G. belangeri* or *G. moniliger*. I have not observed the former to the eastward of the Tonghoo hills. I obtained a nest of fledglings in March in Karen-nee.

316. TROCHALOPTERON MELANOSTIGMA.

Trochalopteron melanostigma, Blyth, J. A. S. B. xxiv. p. 268.

This bird was very abundant in Karen-nee at 5000 feet. A native bird-catcher snared more than a dozen for me one day in a few hours, besides specimens of *Turdus sibiricus*, *T. pallidus*, *Oreocincla mollissima*, and *Sibia picaioides*, using as his bait the larvæ of some insect. In some specimens the ferruginous-chestnut-colour of the throat and breast is continued over the whole of the lower surface.

317. ACTINURA RAMSAYI. (Plate XII.)

Actinura ramsayi, Walden, Ann. & Mag. N. H. ser. 4, xv. p. 402.

I found this bird frequenting the jungle-covered mountain-streams in the open country of Karen-nee, at an elevation of about 3000 feet; but I did not subsequently meet with it.

325. LIOPTILA SATURATA.

Leioptila saturata, Walden, Ibis, 1875, p. 352.

Only observed at between 5000 and 6000 feet in Karen-nee.

328. LIOTHRIX STRIGULA.

Obtained on Nat-toung, about 40 miles north-east of Shuaygyeen, at an elevation of 7000 feet, in April.

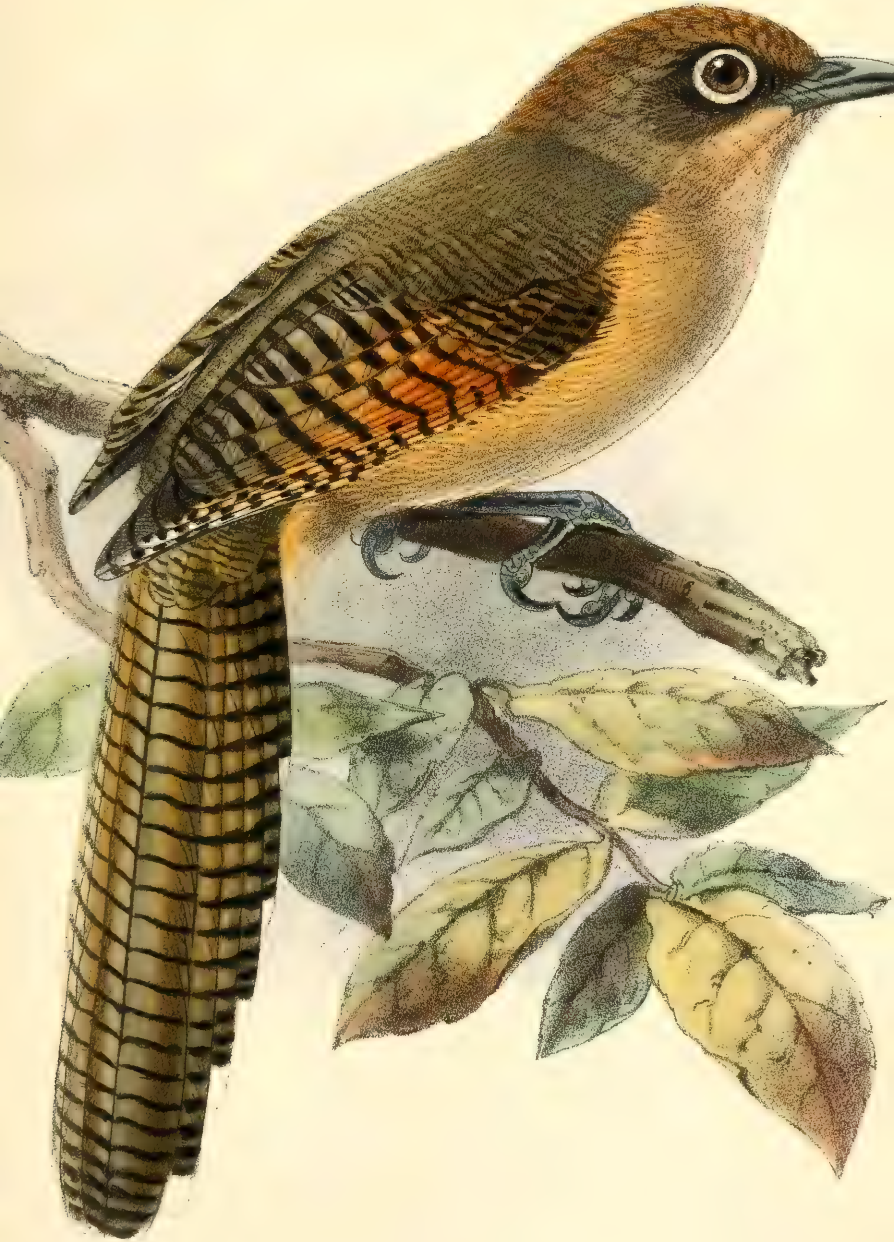
320. LIOTHRIX ARGENTAURIS.

I found the Silver-eared Hill-Tit very common in the Karen hills at a height of 2000 feet and upwards, generally dodging about in low scrub-jungle, but sometimes jumping about on trees, like the true Tits.

I have always found that the females differ from the males, as stated by Hodgson (*conf.* Jerd. ii. p. 252) in having the upper tail-coverts yellowish brown instead of red.

339. MELANOCHLORA SULTANEA.

On one occasion, whilst trying to secure a wounded female of this species which was fluttering over the ground, I was



J. G. Keulemans lith.

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ACTINURA RAMSAYI.

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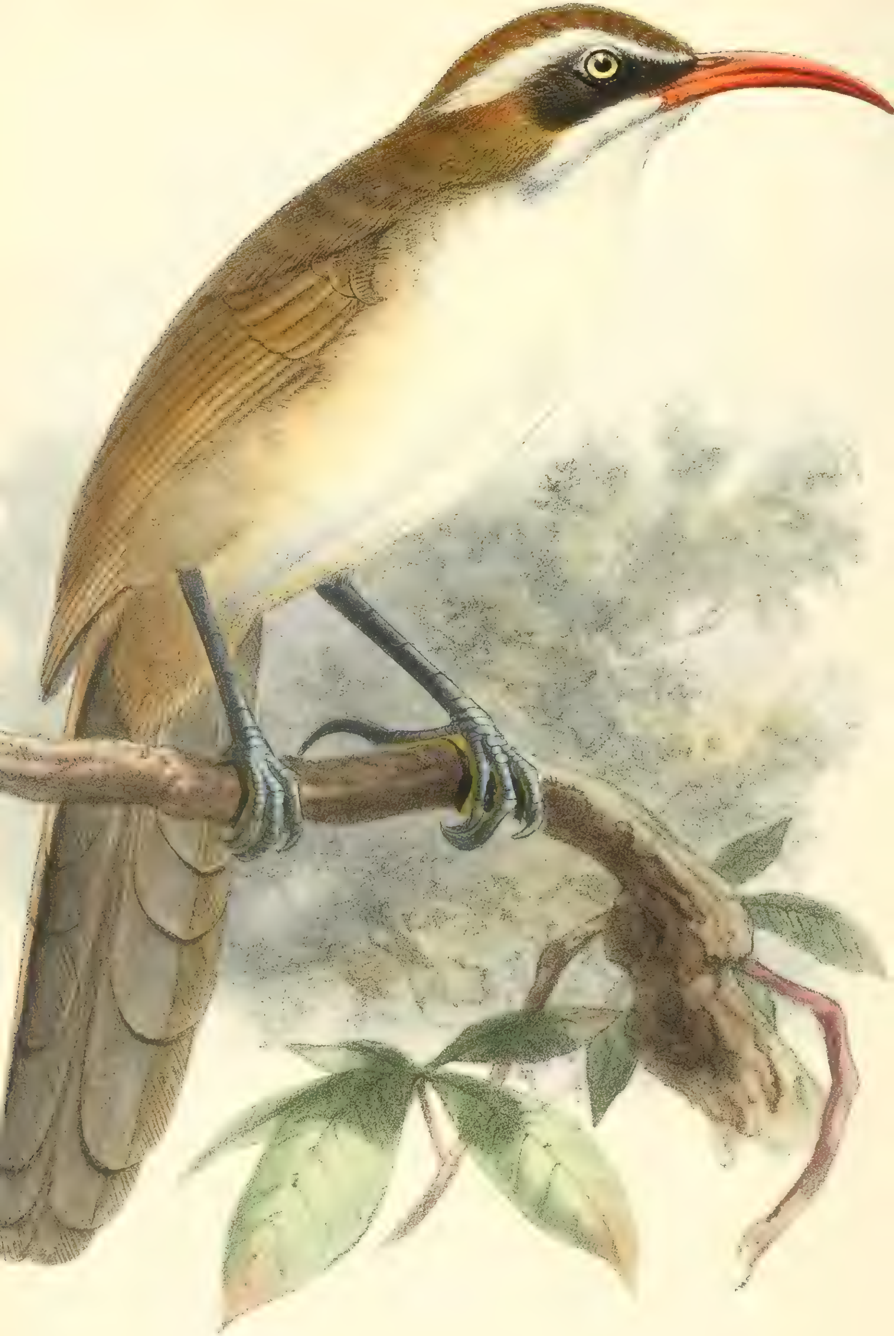

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most savagely attacked by the male bird. This species is very common on the lower slopes of the Karen hills and also on the Yoma hills.

SITTA MAGNA.

Sitta magna, Wardlaw-Ramsay, P. Z. S. 1876, p. 677.

Described from a single specimen obtained by my collector during an expedition from Tonghoo to Karen-nee in January 1876. The bird described and figured is a female, not a male, as stated, by a printer's error, in the original description.

349. POMATORHINUS OCHRACEICEPS. (Plate XIII.)

Pomatorhinus ochraceiceps, Walden, Ann. & Mag. N. H. ser. 4, xii. p. 487.

Generally distributed in the hills, but not nearly so common as the following species.

350. POMATORHINUS LEUCOGASTER.

All my specimens belong to an apparently distinct race; in fact they are more nearly allied to *P. olivaceus,* Blyth, from which they differ in having the lateral breast-feathers and flanks ferruginous chestnut, as in *P. leucogaster,* Gould, and *P. schisticeps,* Hodgson, and in having a broad demicollar of the same colour, formed by the neck-spots extending across the nape. In specimens of *P. olivaceus* there is, as Mr. Blyth points out (J. A. S. B. 1847, p. 451), a rufescent tinge on the nape; but the ferruginous flanks alone immediately distinguish my birds from that species.

Lord Tweeddale has named my Karen-hill birds in his Collection *P. nuchalis.*

This species is by far the commonest of the Scimitar Babblers in the Karen hills. It is very skulking in its habits. I have often had to wait a considerable time before I could even get a sight of one of these birds in a bush in which I knew it to be.

354. POMATORHINUS MARIÆ.

Pomatorhinus mariæ, Walden, Ann. & Mag. N. H. ser. 4, xv. p. 403.

This species, if not absolutely identical with *P. albigularis,* Blyth, is very closely allied, judging by the description of the latter (J. A. S. B. 1855, p. 274).

POMATORHINUS OLIVACEUS.

Pomatorhinus olivaceus, Blyth, J. A. S. B. 1847, p. 451.

This species has been recently obtained in Tenasserim by Mr. Limborg.

379. CRATEROPUS GULARIS.

Occurs only on the western side of the Pegu Yoma range.

385. PRINIA FLAVIVENTRIS.

This species is particularly common about Monkey Point, near Rangoon, where I found its nest. It does not, I think, ascend the hills, where it and *P. gracilis* seem to be replaced by *P. beavani*, Wald., and *P. hodgsoni*, Bl.

428. HIRUNDO TYTLERI.

The Rufous-bellied Swallow was common in the plains of Karen-nee, associating with *H. rustica*.

430. HIRUNDO FILIFERA.

Occurs at Tonghoo.

444. TCHITREA AFFINIS.

I only once observed the Paradise Flycatcher in the Karen hills, and never in the plains of the Tonghoo district.

450. LEUCOCERCA ALBICOLLIS.

Plentifully distributed in the hills, and generally near densely wooded streams.

457. IOLE VIRIDESCENS, Blyth.
462. ALCURUS STRIATUS, Blyth.
465. IXUS BLANFORDI, Jerdon.
466. IXUS FLAVESCENS, Blyth.

These four species are extremely common in the Karen hills, and are generally found in small flocks.

464. IXUS ANNECTENS.

Ixus annectens, Walden, Ann. & Mag. N. H. ser. 4, xv. p. 401 (June 1st, 1875).

Ixus davisoni, Hume, S. F. iii. p. 301.

Lord Tweeddale described this bird from a single specimen which I obtained at Monkey Point, near Rangoon. So far as I can ascertain, his description was published several months before that of Mr. Hume, although the number of 'Stray Feathers' in which the latter appears bears the publishing date of May.

471. Rubigula flaviventris.

This species is very common in the plains, and also in the hills up to a moderate elevation. I found a nest containing two eggs in April at the foot of the Karen hills; but they were unfortunately either lost or broken in transit; so I am unable to give a description of them.

480. Irena puella.

The Fairy Bluebird never occurs in the Karen hills, except on their western slope, according to my experience. Therefore it would appear from this fact, and the statement of Mr. Oates (quoted in S. F. iii. p. 131, line 13), that it is confined, in Northern British Burmah, to the valley of the Sittang river and the adjacent slopes of the Yoma and Karen hills.

I observe, however, that (p. 130) Mr. Hume has examined specimens from Thyetmyo.

481. Analcipus trailli.

In the hills only, at 2000 feet and upwards.

511. Ducula griseicapilla.

Ducula griseicapilla, Walden, Ann. & Mag. N. H. ser. 4, xvi. p. 228.

Iris greyish white; orbital skin greyish brown; bill reddish plum-colour, whitish at the tip.

Confined to the higher parts of the Karen hills, where I found it very difficult to obtain.

514. Alsocomus puniceus.

This is a most stupid and easily obtained Pigeon near Tonghoo. In a grove of trees where they happen to be feeding, any number may be secured; for they will return almost immediately to the same spot from which they have been disturbed by a shot, and will frequently alight on a branch within a few yards of the firer's head.

Iris bloodshot-amber; orbital skin purplish pink; legs and feet carnation.

521. MACROPYGIA ASSIMILIS.

Macropygia assimilis, Hume, S. F. ii. p. 441.

Affects bamboo and other low jungle. I found it most numerous on the western slope of the Karen hills, and generally solitary in its habits.

522. MACROPYGIA TUSALIA.

I found a nest containing two white eggs at 4000 feet in the Karen hills on the 18th March. The eggs measured roughly 1·4 by 1·0 inch.

Iris white, surrounded by pale lilac; orbital skin grey, with an inner rim of purple round the eye; bill blackish; legs purplish pink.

528. GALLUS FERRUGINEUS.

(Burmese, "Tau-kiet.")

I took eleven eggs from a nest in Karen-nee on the 14th March. The eggs were simply laid in a small hollow scratched out by the bird under a fallen branch.

532. FRANCOLINUS SINENSIS.

(Burmese, "Kā.")

This bird, although unknown in the plains of the Tonghoo district, is very abundant in the Karen-nee, and also in the Thyetmyo district to the westward of the Yoma. In the hills it frequents the sides of rocky hills and other inaccessible places. Its whereabouts may always be known by its extraordinary call, which it is continually uttering, and which may be rendered on paper by the syllables *kuk, kuk, kuich, kă-kā*.

The flesh of this Francolin when cooked in the ordinary way is singularly tasteless.

552. CHARADRIUS FULVUS.

The Eastern Golden Plover arrives in Burma about the middle of September, but does not remain very long after the termination of the rainy season.

560. GLAREOLA ORIENTALIS.

Towards the end of April, in both years that I was on the frontier of British Burma, these Pratincoles came into Tonghoo in large numbers for a few days on their way northwards. They might be seen every evening at dusk hawking after insects among the houses on the river-bank.

561. GLAREOLA LACTEA.

The Small Pratincoles breed in great numbers on the sandbanks of the Sittang in April and May, just before the rains commence. In the year 1875 the change of the monsoon took place nearly a month before the usual time, and consequently the sandbanks, on which were lying hundreds of eggs of this bird, *Seena aurantia, Sternula javanica,* and *Rhynchops albicollis,* were covered with water, and in a few days every egg was swept away.

570. LIMOSA ÆGOCEPHALA.

I only once saw this Godwit in Burma. It is a rare bird, according to my experience, at Tonghoo.

583. RHYNCHÆA BENGALENSIS.

On the 14th September 1874 I extracted a perfect egg from a female that I had shot. This seems a late date for the bird to be breeding; but I observe (Hume's 'Nests and Eggs of Indian Birds,' p. 587) that Mr. Layard has known an egg taken from a Painted Snipe in November in Ceylon.

586. GRUS ANTIGONE.

(Burmese, "Gyo-gya-gyee.")

The Sarus Crane is tolerably common in the valley of the Sittang. Mr. Hume does not include it in his paper on the birds of Upper Pegu (S. F. iii.), nor in his lists of the Tenasserim birds in 'Stray Feathers.'

It breeds near Tonghoo; but I have never myself found its nest, but have had the eggs brought to me by the Burmese. They described the nest as a pile of weeds and mud, situated generally in the middle of a swamp.

On the 29th September 1876 a Burman brought me an egg and a newly hatched Sarus chicken. He had taken the eggs and placed them in the nest of a species of *Ploceus* for safety; but one of the eggs hatched in transit. I gave the little bird into the charge of a common Hen, little thinking that she would adopt it. She took the greatest care of it, and showed great wrath if anybody attempted to touch it. On the morning of the eleventh day, however, the little creature died. When just out of the shell it devoured worms greedily.

The young bird when four days old had the upper surface of the body intense dark chestnut and the lower parts whitish brown. Legs livid; bill fleshy yellow, whitish at tip.

In the adult specimens the irides are reddish orange; bill and coronal skin greenish glaucous; skin of the face and neck pale brick-red; legs fleshy pink, brownish in front.

594. CICONIA EPISCOPUS.

Tonghoo.

596. LEPTOPTILUS ARGALA.

The Adjutant is extremely abundant in certain parts during the dry season.

In January 1874 I found these birds very abundant on the Pegu plain, which is intersected in all directions by creeks, in which fishing is carried on on a large scale by the Burmese. The fish are caught in weirs made of bamboo; and to these weirs the Adjutants resort in large numbers in company with crowds of other birds, the whole presenting a most wonderful spectacle. I trust I may be excused for taking the following extract from my note-book, descriptive of one of these fishing-places:—

"*Seena aurantia* and *Sternula javanica* are hovering about in clouds and darting into the water, which is teeming with fish, the Pariah and Brahminy Kites look down approvingly from the top of every available stake, whilst little *Alcedo bengalensis* sits quietly by himself, ever and anon making a dart at some luckless fish. The water itself is covered with Pelicans and Cormorants. The shore is white with Egrets; but here and there an old Cormorant may be seen sitting among them, with outspread wings, drying himself in the sun; and, last but not least, the huge Adjutants stalk about majestically on the banks among the fishermen's houses hard by, or stand motionless on the water's edge, whilst others are circling and wheeling about overhead in large flocks mingled with innumerable Pelicans."

At the end of October and the beginning of November Adjutants pass over Tonghoo, flying southwards in incredible numbers. Whence they come I cannot say; but their destination we know, from what has been said above, to be the creeks which cut up the greater part of the Pegu, Rangoon, and other districts bordering on the sea, where they spend the dry months of the year.

The approach of one of these migrating armies is announced nearly a quarter of an hour before it arrives by the loud noise which the birds make with their wings. Their flight is very slow; and the usual order is single file, or at the most four abreast. I have known one of these flocks to occupy more than twenty minutes in passing over my house. Frequently in the course of a flight the leading birds, or sections of birds, may be seen to wheel to the right or left and commence flying round and round. Each bird as it arrives at the wheeling-point does the same, until the whole flock is one revolving mass; and shortly afterwards it begins to unwind itself, and the order of flight is resumed as regularly as before.

616. GALLICREX CINEREUS.

A common bird, which breeds in the Tonghoo district in August and September, when I have found its nest.

621. HYPOTÆNIDIA STRIATA.

The Blue-breasted Rail breeds at Tonghoo in August and September. I took a nest on the 20th September 1874 containing five eggs of a dull cream-colour, speckled and blotched with reddish brown and purplish stone-colour, particularly towards the larger end. The bird is common at Rangoon and Tonghoo. Jerdon's description (vol. iii. p. 726) of the soft parts does not tally with mine. He says, "Bill yellowish green, irides red, legs dull green;" but all the Blue-breasted Rails that I have examined in Burma have had the bill bright plum-colour, the irides red-brown, and the legs dirty buff. I observe that I have recorded my specimens shot in the Andamans as having the bill purplish lake, irides red, and legs dull pinkish buff.

626. FULICA ATRA.

Occurs at Tonghoo.

629. XEMA BRUNNEICEPHALA.

Rarely found so high up the Sittang as Tonghoo. I only once obtained a specimen, in October.

635. SEENA AURANTIA.

636. STERNA JAVANICA.

Both these species breed in large numbers on the sandbanks of the Sittang in March, April, and May.

637. STERNULA MINUTA.

Breeds on the sandbanks of the Sittang.

639. RHYNCHOPS ALBICOLLIS.

The eggs, which are generally deposited on a sandbank, are very much like those of *Seena aurantia* ; and therefore the most careful identification of the bird to which eggs found on the sand belong is necessary.

I have found the remains of fish-bones, mixed with a considerable amount of grit and sand, in the stomach of one of these birds.

646. SARCIDIORNIS MELANONOTA.

The Comb-Duck breeds in the Tonghoo district in July and August. Burmese have assured me that they breed on trees in colonies ; but I cannot vouch for the truth of this statement, as I have never myself seen the nest*.

On the 21st September a native brought me three live ducklings which he had caught in a swamp. He stated that the nest in which the young birds were hatched out was situated on a low bush in the swamp.

647. DENDROCYGNA ARCUATA.

(Burmese, "Tsé-sé-lé.")

This is the common Whistling Teal of the Tonghoo side of the Yomas, *D. major* being rare. On the Thyetmyo side it would appear that the latter was the common bird; for Mr. A. O. Hume does not include *D. arcuata* at all in his "Birds of Upper Pegu" (S. F. iii. p. 193).

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* [*Cf.* A. Anderson, Ibis, 1874, p. 220, where the nesting-habits of this species are fully described.—EDD.]

I have taken the eggs in August and September. One sitting, much incubated, which I found on the 14th September, was very much stained; but all the fresh eggs that I have seen were pure white.

The Whistling Teal often pretends to be unable to fly when disturbed from her nest. I once saw an Eagle swoop at a female Whistler as she was fluttering along the ground in front of me.

For some general remarks on the district of Karen-nee my previous paper (Ibis, 1875, p. 348) may be referred to.

XLI.—*On a new Bird from Formosa.*

By R. Swinhoe, F.R.S. &c.

(Plate XIV.)

Dr. Steere, whose ornithological discoveries in the Philippines have lately attracted so much attention, also visited Formosa during his travels in the east. The portion of the island traversed by him lay towards the southern extremity, where he penetrated into the mountains of the interior, not visited by me. Amongst several interesting species obtained by him and submitted to me, such as *Suthora bulomachus, Sibia auricularis, Garrulax taivanus,* &c., was a *Liothrix*-like bird, which is quite new to me. Wishing for further information, I waited until I had an opportunity of showing the specimen to Lord Tweeddale. It was new also to him; and he writes, "It is another evidence of the close connexion that must have existed formerly between Formosa and the Himalayan chain." I will therefore bring forward this species under the generic name.

Liocichla, gen. nov.

In general characters a *Liothrix,* but with the stronger legs and shorter wings of a *Garrulax,* and somewhat allied to *Sibia.*

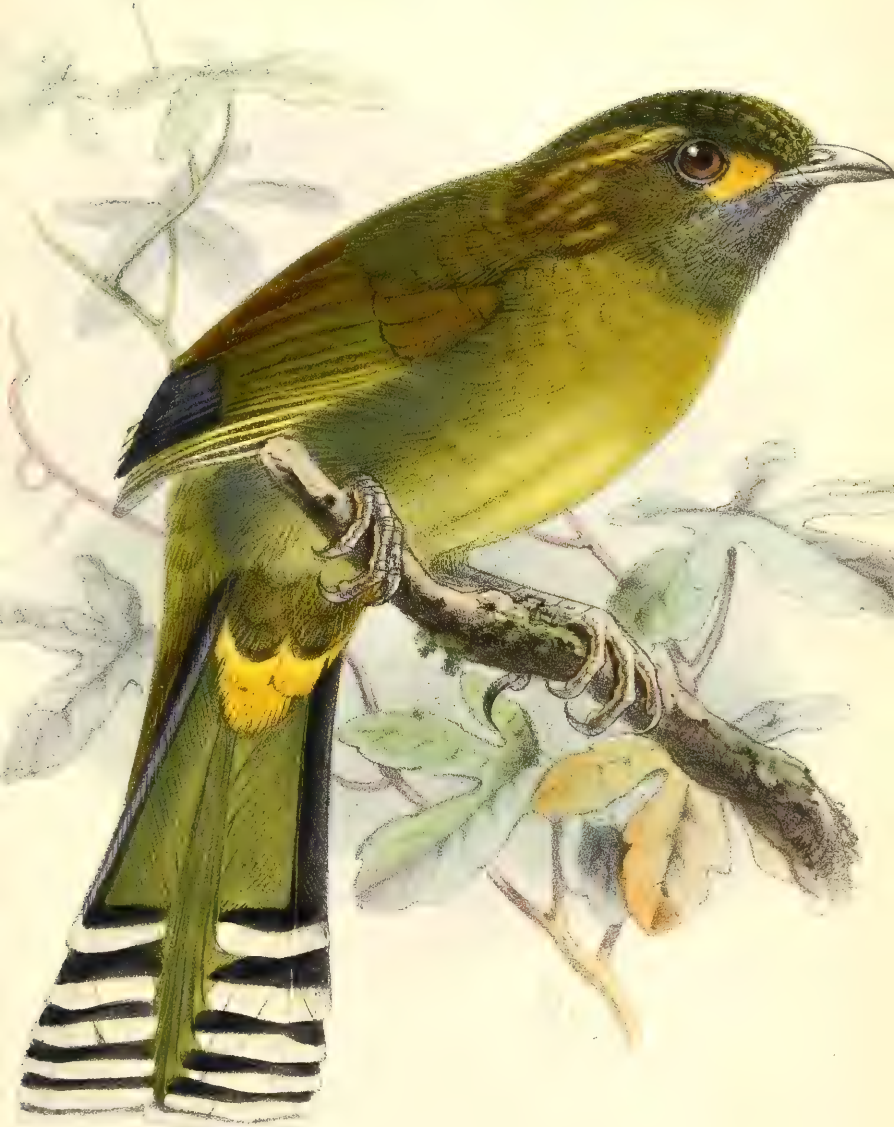
LIOCICHLA STEERII, sp. nov. (Plate XIV.)

Olivaceous green throughout; crown and occiput, chin and throat, flanks and rump smoky; patch of orange-yellow on anterior corner of eye; streaks of yellow on sides of the nape and vent-feathers, broadly tipped with orange; breast, belly, and edge of wing yellow; axillaries smoky; bill and legs light wood-brown; tail olive-green, feathers square at the ends and white, four central rectrices with a black bar before the white tips, three on each side with the apical portion of outer web black as well; secondaries washed with maroon, black on inner webs and apical half, all tipped with white, yellowish green on outer webs, stems black. Length 7·5, wing 2·7, tail 3·4.

XLII.—*A few Words on the Parrots of the Genus* Eclectus, *Wagl.* By T. SALVADORI, C.M.Z.S.

IN the last number of 'The Ibis' a paper by Mr. Forbes has appeared under the title "Recent Observations on the Parrots of the Genus *Eclectus*;" and I wish to make a few remarks on it.

It seems that, although Mr. Forbes is inclined to believe Dr. Meyer's statement that the green *Eclectus* are the males, and the red ones the females, still he does not consider the fact fully established, on account of Mr. Brown's statement that it "is a *gross error*." I hope that those who are still incredulous about Meyer's discovery will know before long on which side is the *gross error*. For my part I have not the least doubt that Meyer is right. My experience is as follows:—I have examined 128 specimens of three different species of the genus *Eclectus*, collected by D'Albertis, Beccari, and Bruijn's men; and the green ones were constantly marked males, and the red ones females. Many of them were dissected by D'Albertis and Beccari. It is worth while mentioning that some of D'Albertis's birds, and all those collected by Beccari in the Aru Islands, were obtained before Meyer made his startling statement.



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LIOCICHLA STEERII.

Mr. Forbes gives the diagnostic table published by me in 1875 (Ann. Mus. Civ. Gen. vii. p. 757) of the three better-known species, *E. polychlorus, E. grandis,* and *E. cardinalis.* He mentions that, accidentally, I have transposed in the table two names, as he has ascertained from a corrected copy of my paper that I had forwarded to Mr. Sclater. It seems that Mr. Forbes has not observed that the correction has been also properly made in the *errata* at the end of the volume in which my paper is contained; anyhow, it appears to me that, knowing my accidental mistake, he should have given my table in the right way, which is as follows:—

1 Virides: lateribus rubro-puniceis. (Mares.)	
a. Majores.	
a'. Viridis, colore obscuriore, cauda minus cærulea . .	1. *polychlorus.*
b'. Viridis, colore lætiore, cauda magis cærulea	2. *grandis.*
b. Minor, cauda vix cærulea	3. *cardinalis.*
2. Rubræ: fascia interscapulari et abdomine cyaneis, vel violaceis. (Feminæ.)	
a. Annulo perioculari cyaneo	1. *polychlorus.*
b. Annulo perioculari cyaneo nullo.	
a'. Subcaudalibus pure flavis	2. *grandis.*
b'. Subcaudalibus auroreis, vel rubro-flavis	3. *cardinalis**.

In the conclusion of his paper Mr. Forbes attempts to give the sexual differences and the geographical distribution of the different species. But, according to my views, he is wrong on both points.

As regards the differences, leaving aside for the present *E. westermanni* and *E. corneliæ,* it seems that Mr. Forbes has been misled by not having attended to the correction in my table. So of *E. grandis* he says "cauda vix cærulea," which characteristic belongs to *E. cardinalis*; and of this he says "cauda magis cærulea," instead of "cauda vix cærulea."

Not less important is the mistake as regards the geographical distribution. Mr. Forbes says that *E. polychlorus* "Habitat in insulis Papuanis et Moluccanis," while in fact it is only to be found in the Papuan Islands. The three species *E. polychlorus, E. grandis,* and *E. cardinalis* are representative forms which inhabit each a peculiar area:

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* I have altered the order of the females to match that of the males.

E. cardinalis lives in the group of Ceram (Ceram, Amboina, and Buru), *E. grandis* in the group of Gilolo, and, last, *E. polychlorus* in the Papuan Islands—from Waigiou to the Solomon Islands, and in the Kei Islands, which, according to my views, we must put with the Papuan Islands rather than with the Moluccas. All this I have already shown in the 3rd part (*Psittaci*) of my "Prodromus Ornithologiæ Papuasiæ et Moluccarum" (Ann. Mus. Civ. Gen. x. p. 31), where, owing to an omission of the printer, "Ceram (*Von Rosenberg, Wallace*)" has been left out from the localities inhabited by *E. cardinalis*. The so-called *E. polychlorus*, from Ternate, Gilolo, Batchian, and Morotay, is the male of *E. grandis*. We have an evident proof of this in the fact that the so-called *E. linnæi*, which now we know is the female of *E. polychlorus*, is not to be found in the islands of the Gilolo group, but only in the truly Papuan Islands.

Turin, Zoological Museum, July 25th, 1877.

XLIII.—*Notices of recently published Ornithological Works.*

[Continued from p. 385.]

52. *Salvadori on the Papuan Parrots.*

[Prodromus ornithologiæ Papuasiæ et Moluccarum auctore Thoma Salvadori. III. Psittaci. Ann. Mus. Civ. Genoa, x. p. 21.]

The third part of Salvadori's 'Prodromus' is devoted to the Parrots—a prominent group in Papua and the Moluccas—no less than 92 species being enumerated in the present list. D'Albertis, Beccari, and Bruijn have transmitted no less than 1363 specimens of this group to Genoa, referable to 69 species.

The following four new species are established:—*Geoffroyus keyensis*, ex inss. Key; *G. schlegeli* (=*rhodops*, Schl., nec G. R. Gray); *Lorius erythrothorax*, ex Nov. Guin. merid.-orient.; *L. flavo-palliatus* ex Obi et Batchian: and two new genera, "*Oreopsittacus*" for *Trichoglossus arfaki*, Meyer, and "*Charmosynopsis*" for *Charmosyna pulchella*, G. R. Gray.

53. *Salvadori on Papuan and Moluccan Nectarinians.*—

[Intorno alle specie di Nettarinie della Papuasia, delle Molucche e del gruppo di Celebes. Atti d. R. Acc. d. Sc. di Torino, xii. p. 299.]

This paper supplements the author's former memoir on *Hermotimia* (Atti R. Ac. Sc. Torino, x. p. 201), but includes also notices of all the other *Nectariniæ* of Papuasia, the Moluccas, and Celebes. There are, according to Prof. Salvadori's views, 14 *Hermotimiæ*, 3 species of *Æthopyga*, 2 of *Cyrtostomus*, and 1 *Anthrothreptus* within these limits.

54. *Salvadori on D'Albertis's Collections of* 1872.

[Catalogo della prima collezione di uccelli fatta nella Nuova Guinea nel 1872 dal Signor L. M. D'Albertis. Ann. Mus. Civ. Genoa, x. p. 111.]

Of the collections made by D'Albertis in New Guinea in 1872 only a portion, principally the novelties, have been yet described, by Sclater in the Zoological Society's 'Proceedings,' and by Salvadori in the 'Annali' of the Museo Civico of Genoa. Salvadori now gives a complete account of these collections, made at various points along the northern coast of New Guinea, and during the celebrated excursion to Mount Arfak, altogether embracing 499 individuals, referable to 180 species. Of these 25 were new to science, 13 of which were described by Sclater, and 12 by Salvadori.

55. *Sharpe's 'Catalogue of the Birds in the British Museum,'* vol. iii.

[Catalogue of the Birds in the British Museum, vol. iii. Coliomorphæ, containing the families Corvidæ, Paradiseidæ, Oriolidæ, Dicruridæ, and Prionopidæ. By R. Bowdler Sharpe. 8vo. London: 1877.]

Mr. Sharpe has now entered upon the most difficult portion of his task—the reduction into systematic order and the description of the extensive group of Passeres, or Passeriformes, as he prefers to term it, which contains the great mass of living birds. Since the time of Latham's 'General History' no naturalist has attempted such a work; and it is only one who has the resources of a central position and a great national collection at his back who could undertake it with any chance of success.

The systematic arrangement adopted by Mr. Sharpe appears to be a combination of those of Prof. Garrod, Prof. Sundevall, and Mr. Wallace. The birds treated of in the present volume are the "Coliomorphæ"—a term applied here to the families Corvidæ, Paradiseidæ, Oriolidæ, Dicruridæ, and Prionopidæ. This, it may be remarked, is a very different series from Prof. Sundevall's "Coliomorphæ," which embraces the Icteridæ, Sturnidæ, Corvidæ, and Paradiseidæ of most authors, with some minor groups. The Prionopidæ of Mr. Sharpe we cannot regard as a very natural family, embracing, as it does, such diverse-looking forms as *Grallina*, *Eurocephalus*, *Hypocolius*, and *Euryceros*! But much must depend on whether Mr. Sharpe's new character of the production forwards of the "chin-angle," whereby he separates the Coliomorphæ from the remaining "Turdiformes," will stand the test of lengthened examination.

As regards the nomenclature employed by Mr. Sharpe, we may observe that the Stricklandian code now adopted by most English naturalists is not obeyed in several particulars. It is enacted thereby that "specific names, when adopted as generic, must be changed." But Mr. Sharpe maintains *Corone corone* and *Pyrrhocorax pyrrhocorax* directly in the teeth of this wholsome regulation. It is also enacted that "a name glaringly false may be changed." Yet Mr. Sharpe rejects appropriate names in order to call an Oriole of the Philippines *chinensis*, and a Bolivian Crow *chilensis*—the evidence of identification in both these cases being, to say the least of it, very doubtful.

We rejoice to see that in the present volume Mr. Sharpe has somewhat curtailed the length of his descriptions. Short Latin diagnoses would, we think, have been much better in a work of this kind, with a few observations added to show the relation of the species to its nearest allies. The "keys to the species," given under each genus, are very useful in their way, but break down when you come to use them for the determination of specimens, from only one point of difference between allied species being given.

The total number of species recognized by Mr. Sharpe as belonging to the five families treated of in the present volume is 367, of which 315 are represented (by 2014 specimens) in the British Museum. The new generic terms used are 7 in number—namely, *Heterocorax, Rhinocorax, Microcorax, Macrocorax, Pseudorectes, Melanorectes*, and *Pinarolestes*. The species described as new are *Strepera intermedia, Psilorhinus cyanogenys, Phonygama jamesii, Oriolus diffusus, O. steerii, Sphecotheres salvadorii, Irena melanochlamys, I. criniger, I. tweeddalii, Rectes tibialis, R. aruensis, Collyriocincla pallidirostris, Bradyornis woodwardi*, and *B. diabolicus*—14 in all, besides several "subspecies."

In concluding this short notice of a most important work, we cannot but congratulate Mr. Sharpe upon the energy he has displayed in attacking the formidable task of a general descriptive catalogue of birds, and express our sincere hopes that he may be able to bring it to a successful conclusion.

56. *Sharpe's Birds of Kerguelen's Island.*

[Transit-of-Venus Expedition. Zoology.—Birds. By R. Bowdler Sharpe, F.L.S., F.Z.S., &c. 4to, pp. 62, pls. vi.–viii.]

Mr. Sharpe's share of this paper relates chiefly to the nomenclature of the species included in it, and to the labour of getting together all previous information respecting the birds of Kerguelen Island. The Rev. E. A. Eaton, the naturalist attached to the English Transit Expedition to this place, has furnished copious field-notes on the species observed by him, which considerably enhance the interest of the paper. The nesting-habits of many of the birds are also fully described by him; and the memoir gives a very complete account of the ornithology of this island. A good deal of the ground traversed in the papers on the same subject by Drs. Kidder and Coues, and Drs. Cabanis and Reichenow, the former of whom described the ornithology relating to the American, the latter to the German Transit Expedition, is necessarily gone over again. But, besides incorporating the labours of his immediate predecessors, Mr. Sharpe has very properly added an account of all the available materials collected by the Antarctic Expedition to which Sir J. Hooker was attached, as well as notes on Ellis's drawings, made during Capt. Cook's third voyage*. Cook's visit to Kerguelen Island is related by himself in the first volume of the 'Third Voyage' (chaps. iv. & v.). At the end of chapter v. a good account of the natural history is given by Mr. Anderson, the surgeon of the 'Resolution,' which includes descriptions of the birds of the island. This passage seems to have escaped Mr. Sharpe's notice.

The Procellariidæ, so numerously represented in this island, come in for a large share of attention; and Mr. Sharpe has given important notes on several members of this family. He has carefully examined a large series of specimens of the genus *Prion*, with a view to testing the validity of some of the species for which recognition has been claimed; the result is that he admits only two, *P. vittatus* and *P. desolatus*. Again, *Thalassidroma melanogaster*, Gould, is united (somewhat prematurely, we think) with *T. tropica* of the same author, and the latter name adopted, apparently because the description of it precedes that of the former by a page in the paper where both are described†.

Œstrelata mollis is introduced into the list on the authority of Drs. Cabanis and Reichenow; but the specimen brought home by the 'Gazelle' was really one of *Œ. brevirostris*, and *Œ. mollis* must, for the present, be erased from the list of Kerguelen birds. For this error Mr. Sharpe is not responsible‡.

Mr. Sharpe has also discussed fully the complicated synonymy of some of the Penguins; but here space prevents us from following him for the present.

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* Mr. Sharpe (p. 1) speaks of Ellis as having accompanied Sir J. Banks and Capt. Cook; but this is incorrect. Sir J. Banks only accompanied Cook during his *first* voyage, when Parkinson and Buchan were the artists engaged. Kerguelen Island was not then visited—nor yet during the second voyage, when the two Forsters were on board.

† Mr. Sharpe has on several previous occasions introduced changes of nomenclature on similar grounds. In our opinion, however, the practice is a perversion of the law of priority, which means, if it means any thing, priority of publication. When two names are published simultaneously, the question of priority does not arise, and therefore the claims of the one in most frequent use are, we think, too obvious to need asserting.

‡ [During a recent visit to the Berlin Museum, Dr. Reichenow kindly showed me this specimen, when I at once saw that it belonged to *Œ. brevirostris*.—O. S.]

In concluding these remarks, we cannot help thinking that it is well for the indigenous fauna of this island that Transits of Venus are of rare occurrence; for such facts as "the bagging of 2000 *Querquedulæ eatoni* within a radius of eight miles," and "the conversion of a whole community of Penguins into 'hare soup,' for the officers of one of Her Majesty's vessels," read ominously for the welfare of the birds of Kerguelen Island.

57. *Lawrence on a new* Pitangus.

[Description of a new Species of Bird of the Genus *Pitangus*. By G. N. Lawrence. Ann. Lyc. N. Y. xi. pp. 288–290, Nov. 1876.]

The new species here described is called *P. gabbii*, after its discoverer, the well-known explorer of the Talamanca district of Costa Rica. This bird comes, however, from San Domingo, where Prof. Gabb spent the past winter. It is smaller than either *P. caudifasciatus* of Jamaica, or *P. taylori* of Porto Rico, its nearest allies, and differs in other points from those species. We are glad to note that Prof. Gabb purposes to spend another winter in San Domingo, and trust he will not fail to turn his attention to its avifauna, our knowledge of which, as the discovery of the present species shows, is by no means complete.

58. *Rowley's 'Ornithological Miscellany.'*

[Ornithological Miscellany. Edited by George Dawson Rowley, M.A., F.L.S., F.Z.S., Member of the British Ornithologists' Union. Part ix. London: 1877, Trübner and Co.]

In the present number Mr. Rowley gives us his usual varied *menu*. The first article treats of certain members of the genus *Ptilopus*, such as are especially related to the curious *P. insolitus*, Schl., which Drs. Cabanis and Reichenow have recently elevated to a genus, *Œdirhinus*. Sclater's notes on it in the 'Proceedings' of the Zoological Society, 1877, are reprinted, as well as Schlegel's original remarks. Dr. Meyer, too, communicates observations on the same subject. To these are added extracts from W. Marshall's work relating to the bony protuberances of the skull of certain birds. *Œ. insolitus* was figured in part viii. *Ptilopus jobiensis* is now depicted as the nearest ally of the former species.

The second article is on "Bird-nets," in treating of which Mr. Rowley reproduces some of the engravings in Willughby's 'Ornithology.' Interesting sketches represent bird-netting as practised at the present time on the shores of the Wash. Mr. Rowley gives many details on this subject. Next we have an article on a recent addition to the genus *Loriculus*, by Mr. Sclater, accompanied by a plate, whereon *L. aurantiifrons* and *L. tener* are represented—the latter being a new species lately described in the 'Proceedings,' from Duke-of-York Island. Finally, we have a further instalment of the translation of Col. Prejevalsky's work on the birds of Mongolia, to which we have before alluded (*anteà*, p. 378). A plate of *Grus nigricollis* is now given, copied from the original work.

59. *E. P. Ramsay's Papers in the 'Proceedings of the Linnean Society of New South Wales.'*

We have just received from Mr. Ramsay some papers extracted from the 'Proceedings' of the above Society for the current year. Those relating to birds are as follows:—

(1) "On a new Species of *Platycercus* from the interior of New South Wales." This species is described as *P. mastersianus*.

(2) "Description of a new Species of *Gerygone*," called *G. flavida*. Specimens were obtained by Mr. Ramsay himself in the dense scrub of Herbert river in 1874. Its nearest ally is *G. albogularis*.

(3) "Some further remarks on *Poëphila gouldæ* and *P. mirabilis*. The question of the distinctness or identity of these two supposed species is here further discussed; but Mr. Ramsay hesitates which view to adopt.

(4) "Description of some new Species of Birds from New Britain, New Ireland, Duke-of-York Island, and the South-east coast of New Guinea." Here *Nasiterna pusilla* is described as a new species from "the dense forests in the neigh-

bourhood of Port Moresby, New Guinea." *Ninox novæbritanniæ*, sp. n., from New Britain, probably =*N. odiosa*, Scl. P. Z. S. 1877, p. 108. *Myzomela coccinea* and *M. erythina* are two new species, the former from Duke-of-York Island, the latter from New Ireland.

(5) "Description of some rare Eggs of Australian Birds, and a Note on the Eggs of certain Species of *Megapodius*." The eggs of the following species are described:—*Ælurœdus smithi*, *Hylacola pyrrhopygia*, *Elanus axillaris*, *Pardalotus rubricatus* and *P. uropygialis*, *Entomophila rufigularis*, and *Poëphila atropygialis*, Diggles. The egg of *Megapodius cuvieri* is also described, and its measurements compared with those of several other species.

60. *Wharton's 'List of British Birds.'*

[A List of British Birds, the Genera arranged according to Sundevall's Method. The Nomenclature revised by Henry Thornton Wharton, M.A., M.R.C.S., F.Z.S. 12mo, pp. 20. London: 1877, J. Van Voorst.]

A useful list of British birds, in a handy form, which can be either used as a check-list, or cut up for labels. In the introduction are remarks on the uses of this list, on the limits of the British avifauna, on nomenclature, and on classification. Under the head of nomenclature the rules of the British Association are given, but without the comments on them originally printed. The classification adopted is that of the late Prof. Sundevall. Though we are by no means sorry to see the stereotyped arrangement of British lists broken through, we do not think that Sundevall's system can be accepted in its entirety, as, owing to the admission of external characters alone into his classification, incongruities occur in it (such as the Hoopoe being placed in the Oscines next to the Larks) which have little chance of ultimate acceptance. Without in any way detracting from the value of the 'Methodi naturalis Avium disponendarum Tentamen,' we are of opinion that the arrangement there adopted has not been so widely accepted as Mr. Wharton supposes. Classification has never been a very strong point with ornithologists who confine themselves to the study of British birds. Placed side by side with older lists, Mr. Wharton's will not fail, we trust, to provide food for useful reflection on this important subject.

61. *Marshall's 'Birds'-nesting in India.'*

[Birds'-Nesting in India. A Calendar of the Breeding-seasons, and a Popular Guide to the Habits and Haunts of Birds. Illustrated. By Capt. G. F. L. Marshall, R.E., F.Z.S. &c. Crown 8vo, pp. 184. Calcutta: 1877.]

For publishing this useful and well-arranged volume all bird's-nesters in India will, we are sure, thank Capt. Marshall. In it the time of breeding, the shape and position of the nest, the range during the nesting-season of a large number of the birds of India, and other details are given in a concise yet clear manner. To afford still further information, a calendar is added recording the doings of birds as regards their breeding during every month of the year. To those accustomed to search for bird's-nests in more temperate countries the uncertainty of the nesting-time of tropical species is very perplexing. The comparative completeness of Capt. Marshall's list shows how industriously and successfully the many ardent ornithologists who have of late years explored India have pursued their favourite study. Still there are gaps to fill up, and points yet to be made out, before the subject is complete; and we trust that egg-collectors in India will freely respond to Capt. Marshall's request to be supplied with fresh notes and information to be incorporated in a future edition.

62. *M'Cauley's 'Birds of the Red River of Texas.'*

[Notes on the Ornithology of the Region about the Source of the Red River of Texas, from Observations made during the Exploration conducted by Lieut. E. H. Ruffner, Corps of Engineers, U.S. A. By C. A. H. M'Cauley, Lieut. 3rd U.S. Artillery. Annotated by Dr. Elliott Coues, U. S. A. Extracted from the Bulletin of the Survey, vol. iii. no. 3. 8vo, pp. 655–695. Washington: 1877.]

This paper is issued as part of the Bulletin of Dr. Hayden's Survey, and relates to the ornithology of the little-known district of Texas called the Llano Estacado or Staked Plain, a desolate treeless waste, "flat beyond comparison," situated at an elevation of 4000 feet above the sea-level.

The species mentioned are not numerous, nor are there any amongst them calling for special comment; but the list helps to swell the knowledge of the distribution of North-American birds, a subject which has been been so thoroughly worked up of late years by our American brethren.

63. *Lieut. Wheeler's Reports upon Surveys west of the* 100*th Meridian.*

[Report upon Geographical and Geological Explorations and Surveys West of the One Hundredth Meridian, in charge of First Lieut. George M. Wheeler, Corps of Engineers, U.S. Army. Vol. v. Zoology. 4to. Washington: 1875. And

Annual Report upon the Geographical Surveys West of the One Hundredth Meridian, in California, Nevada, Utah, Colorado, Wyoming, New Mexico, Arizona, and Montana, by George M. Wheeler, First Lieut. of Engineers, U.S. Army; being Appendix JJ of the Annual Report of the Chief Engineers for 1876. 8vo. Washington: 1876.]

In the first of these volumes the ornithological results of Lieut. Wheeler's Survey are incorporated up to the end of the collecting-season of 1874. The second treats of the observations and collections made during 1875. Both are by Mr. W. H. Henshaw, who has proved himself to be an accurate observer as well as a diligent collector. One of the results of the exploration of the southern districts of the United States bordering upon Mexico has been the discovery that several species, hitherto only known as inhabitants of the Mexican highlands, have a much more extensive northern range. Mr. Henshaw's labours have demonstrated this; and his notes on these and other better-known species form the most important part of the volumes before us. Amongst the newly annexed birds is *Dendrœca olivacea,* originally described as a Texan species by the late Mr. Giraud, but lately believed to be solely of more southern origin, being common in the highlands of Mexico and Guatemala. For this bird a new generic name, *Peucedramus,* is proposed by Dr. Coues, as it differs in some respects from typical *Dendrœcæ.* The quarto work is illustrated by fifteen chromolithographs from Mr. Ridgway's pencil. Though the ornithological portion of these volumes alone demands the present notice, it by no means occupies more than its share with other zoological matter. Nearly every branch of Zoology is treated of; and the work shows with what praiseworthy energy the scientific departments of these surveys have been, and are, supported by the United-States Government.

64. *Finsch's Collections from Siberia.*

[Westsibirische Forschungsreise 1876 unter Führung von Dr. O. Finsch. Catalog der Ausstellung ethnographischer und naturwissenschaftlicher Sammlungen. Mit erläuternden Bemerkungen von Dr. O. Finsch. 8vo, pp. 42. Bremen: 1877.]

This catalogue is issued by the Geographical Society of Bremen, and contains a list of the specimens of various kinds obtained by the expedition sent during last year to Western Siberia under the direction of our well-known Foreign Member, Dr. Finsch. In the earlier part of this volume (pp. 48–66) will be found ornithological letters, addresssd to us by Dr. Finsch from various points of the route taken. In the present catalogue lists of the characteristic birds of the different districts visited are given, divided as follows—the characteristic birds of the steppes, of the steppe-lakes, of the high mountains, of the valley of the Ob, and of the "tundra" region. A more complete account of the collection is, we believe, being drawn up.

65. *Oustalet on new Species of Ibis.*

["Sur une nouvelle espèce d'Ibis (*Ibis gigantea*)," and "Description d'une nouvelle espèce d'Ibis (*Ibis harmandi*)." Bull. Soc. Philomathique, 7^me^ série, i. pp. 25–30. Paris: Jan. 1877.]

The first of these birds, indeed a giant amongst its kindred, is described from a specimen in the Paris Museum, which was obtained by Mons. Harmand on the banks of the Mékong river, in Cambodia. M. Oustalet compares it with *Ibis papillosa*, which, however, it largely exceeds in dimensions, in this respect approaching the size of *Tantalus*. The second species appears to have been long represented in the gallery of the Paris Museum by a specimen obtained in 1862 by M. Bocourt in the kingdom of Siam. Additional specimens, procured by M. Harmand, enabled M. Oustalet to distinguish the species from *Ibis papillosa.* These differences are pointed out, and the species referred to the genus *Geronticus* under the name *G. harmandi.* Figures of these apparently fine novelties would be very acceptable.

XLIV.—*Letters, Announcements, &c.*

The following letters, addressed "To the Editors of 'The Ibis,'" have been received:—

Sirs,—Permit me, in the cause of scientific exactness, to remark that the artist has coloured the crissum of *Ægithina viridissima* ♂ (*anteà*, pl. v.) green instead of bright yellow, and that he has made the subdued brown marks on the under surface of the rectrices of *Prinia rafflesi* (*anteà*, pl. vi. f. 1) terminal instead of subterminal.

Yours, &c.,
Tweeddale.

Chislehurst, July 7, 1877.

Sirs,—In the April number of 'Stray Feathers' for this year (p. 57, note), Mr. Hume remarks that *Horeites sericea,* Walden (Blyth, B. Burma, no. 392), from the Karen hills, is uncommonly close to *Phylloscopus pallidipes,* Blanford (J. A. S. B. 1872, pt. ii. p. 162, t. vii. f. 1). Since describing *H. sericea* I have been able to compare it with Sikhim examples, marked *P. pallidipes,* Blanf.; and I find that the two birds are identical. The widely erroneous generic position assigned to his species by Mr. Blanford is my only excuse for being guilty of the offence of bestowing a fresh title on a previously described and admittedly good species. Mr. Hume also observes (*t. c.* p. 60) that *Alcippe magnirostris,* Walden, from the Karen hills (*t. c.* no. 369) is *A. phayrei,* Blyth (J. A. S. B. 1845, p. 601). Mr. Blyth may have been in error when he identified (B. Burma, no. 368) *A. phayrei* with *A. nipalensis*; but I am unable for the moment to decide whether *A. magnirostris* is the same as the Arakan species, my collection being packed up.

Besides several birds to which are given distinctive titles in this number, by Mr. Hume, "if really new," or "if considered distinct," &c., *Æthopyga sanguinipectus*, Walden (Ann. & Mag. N. H. ser. 4, xv. p. 400, 1875, & B. Burma, no. 494), receives the additional title of *Æ. waldeni*; and a bird well known to ornithologists, certainly to all those who consult the ordinary sources of reference before proceeding to give a new title, *Turdus sibiricus*, Pallas (1776), finds a place among the "if really new" novelties, and in its old age receives the title of *Turdulus davisoni*, Hume. Mr. Davison lately obtained it in Tenasserim, whence I also have received it from Mr. Limborg, labelled "*davisoni*, Hume." In March 1874, Mr. Wardlaw Ramsay found it in Karen-nee, as already mentioned by me (Blyth, B. Burma, no. 252) and by Mr. Dresser (in his 'Birds of Europe'). In the last-named work it is well figured, as it had already been in Gould's 'Birds of Europe,' and again in his 'Birds of Great Britain,' as likewise by Schlegel in the 'Fauna Japonica."

Yours, &c.,

TWEEDDALE.

Chislehurst, July 17, 1877.

SIRS,—In the July number of 'The Ibis,' in the remarks upon the first part of my monograph of the Bucerotidæ, now in course of publication, you object to the names in the 'Specimen Faunulæ Indicæ,' given in the 'Indische Zoologie' of Forster, because he was not the author, and ask if they must be necessarily adopted—or, to be absolutely correct, if *Rhinoplax vigil*, the name given to the Helmeted Hornbill, must be accepted. It is true that Pennant is *stated* to be the author; and he may have produced an English version; but he never wrote a line of the work *as we see it in Forster's edition*; and I derive my authority for this statement from Pennant himself. In the second edition of his 'Indian Zoology,' printed by Henry Hughs for Robert Faulder, London, 1790, Pennant says that this "work, or rather fragment"

('Indische Zoologie'), "was begun in the year 1769. The descriptive part fell to my share: the expense of the plates was divided between Mr. Banks, now Sir Joseph Banks, *Baronet*: John Gideon Loten, Esq.; a governor in Ceylon; and myself. Twelve only were engraved and published: soon after which, the undertaking appeared so arduous that the design was given over." . . . . "I prevailed on my two friends to unite with me in presenting the learned JOHN REINHOLD FORSTER with the plates. I also bestowed on him three others, engraven at my own expense, before the work was dropped. These were never published in *England*; but when *Dr. Forster* left our island, he took the whole with him, and in 1781 printed, at *Halle*, in *Saxony*, an edition very highly improved, and translated into *Latin* and *German*. He prefixed to it a most elaborate lucubration *de* Finibus et Indole *Aëris, Soli, Marisque* Indici; described the subjects of the three additional plates; and inserted, after the description of the fifteenth plate, a most learned dissertation on the genus of the BIRDS OF PARADISE, and on the PHŒNIX. He added several notes; and at the end presented his readers with a *Faunula* of the quadrupeds and birds of the extensive region of India and its Islands." It will be observed that Pennant makes no claim whatever to be the author of this 'Specimen Faunulæ Indicæ,' as published in Latin in the 'Indische Zoologie;' and it can only be regarded as an act of courtesy on the part of Forster that Pennant's name was inserted as author of this LATIN list. The descriptive part mentioned by Pennant as his share, must have referred, if it was in this book at all as published by Forster, to the first portion; for there is no "descriptive part" in the list of names of quadrupeds and birds. I cannot see, therefore, how it will be possible to reject this portion of the 'Indische Zoologie,' when the rest, containing descriptions by Forster of various species, is accepted, "and his names have always been in use." P. L. S. Müller is now, I believe, universally quoted for the species named by him; so is Boddaert; and so also should be Forster; and whenever an intelligible reference is given by him to the species he intends to characterize, it appears to me the name he bestows must be received. A translation of Forster's work, made by Dr. Aiken of Yarmouth, was reprinted and published in 1795, as stated by Pennant, to which was added the 'Faunula Indica' of Latham and Davies. I think, therefore, we shall be obliged to accept *Rhinoplax vigil* as the only proper name for the Helmeted Hornbill, and also *Rhytidoceros plicatus* for the Papuan Wreathed Hornbill, the synonymy of which was so clearly given by Lord Tweeddale in the July 'Ibis.' I have always considered, Messrs. Editors, and I think you will agree with me, that it is the duty of one who writes a monograph, to state *all* the *facts* he may discover in regard to his subject, no matter what the effect may be on its nomenclature (which may previously have been but imperfectly understood), or what preconceived opinions may be shown to be erroneous, and also to give to the original describer of a species, where-ever he may be found, after 1766, the credit due to his work and the priority which is his right; and it is to carry this out in all fairness that I have accepted Forster's work (even if it be only a Latin or German translation of an unpublished English one) in its entirety as that of a thoroughly reliable and competent author, in the present instance to the discomfiture and confusion of Boddaert and Gmelin, who mistakingly supposed they enjoyed the precedence.

I am, &c.,
D. G. Elliot.

Paris, 10th July.

[Pennant's positive statement, as quoted by Mr. Elliot, that Forster was the author of the 'Faunula Indica,' and Forster's equally positive assertion that Pennant was its author, leave us, as far as our present information goes, in a position of complete uncertainty to whom to ascribe this work—a position from which we have no wish to rescue ourselves. As regards the work itself, it is a fragmentary list, and intended as a prelude to a more formal memoir. Its scientific value is slight indeed, as it is merely a catalogue of names (not always binomial), none of which are accompanied by any description and to many no references whatever are added. We therefore see nothing to regret, but, on the contrary, cause for congratulation that the uncertainty of the authorship of this unfinished paper places it in the category of anonymous works, and renders it, in our opinion, unusable for purposes of nomenclature.—Edd.]

Dresden, August 4, 1877.
(R. Zoological Museum.)

Sirs,—I described in the year 1874 (Sitz. Akad. Wien, lxix. p. 493) a new genus and species of Dicruridæ from New Guinea, *Chætorhynchus papuensis*. I then had overlooked a very characteristic large spot of white feathers on the edge of each shoulder; also Mr. Sharpe, who has described and figured the bird in his Catalogue (vol. iii. 1877, p. 242, pl. xiii.), does not mention these white spots. The reason why they have been overlooked by both of us is this, that they are concealed by the feathers of the mantle when the bird is looked at with closed wings. But just having had a specimen stuffed with the wings spread, the spots appeared, and could no longer be overlooked. I am anxious to publish this valuable specific character of *Chætorhynchus papuensis*, because I am afraid, if I do not, that the same bird will soon be rediscribed under a new specific name.

Yours &c.,
A. B. Meyer.

Northrepps Hall, Norwich.
6th September 1877.

Sirs,—Allow me to correct an error which I have inadvertently made in the enumeration of the Transvaal birds recorded in ‘The Ibis’ by Mr. Thomas Ayres.

In ‘The Ibis’ for 1876, p. 433, is the following sentence:—“Mr. Ayres's previous papers on the birds of Transvaal *record* 152 *species, vide Ibis,* 1874, *p.* 107.” The latter part of the sentence ought to have run thus,—“*record* 213 *species, vide Ibis,* 1874, *p.* 105.”

As the result of this correction, the number of the last species (*Graculus africanus*), recorded in the present volume of 'The Ibis' (*anteà*, p. 354), should stand as 282, instead of 221.

Yours &c.,
J. H. Gurney.

Sirs,—There is a peculiar white stage of plumage in which the Glaucous Gull is not unfrequently found, which, while from time to time it has attracted a good deal of notice, has never received a satisfactory solution. It is a stage at which the bird is wholly white or, to speak more correctly, a very light cream-colour. The idea that it is the garb of extreme old age is dismissed; but there can be no doubt, I think, that it is a state which most Glaucous Gulls assume, and at no very juvenile time of their lives. Some time ago I saw at Bridlington a Glaucous Gull which was to me very interesting; for the mantle of grey was blotched with white in large patches, showing that it was passing from the white stage to the normal adult colour; at least so it seemed to me after examining it as well as I could through the glass of the case. This bird had been kept alive, and, what was very remarkable about it, its eye was as white as a Jackdaw's.

If it be a law that the pure white phase of the Glaucous Gull is a phase which most individuals have to pass through, it is not unlikely that the same holds good of the Iceland Gull, a species so closely approximate that many good naturalists are puzzled to distinguish a large specimen of the one sort from a small one of the other. I have seen two pure white Iceland Gulls which, from their small size, I am sure were Icelanders, and not Glaucous Gulls.

Yours &c.,
J. H. Gurney, Jun.

Northrepps Cottage, Norwich.

June 23, 1877.

Sirs,—During a recent visit to Malaga I saw two live Trumpeter Bullfinches (*Erythrospiza githaginea*), both apparently males, which had been caught by some birdcatchers in the neighbourhood, and luckily fell under the notice of Señor Francisco de los Rios, Curator of the Instituto at Malaga, to whom ornithologists are indebted for the knowledge of the occurrence of several scarce birds in the vicinity of that city.

I succeeded in securing these birds for Lord Lilford, and trust they may survive the passage home.

I believe this North-African bird has not hitherto been recorded from Spain, and only in three or four doubtful instances from the European continent, although, according to Mr. Wright, it has been several times caught alive at Malta.

Francisco de los Rios having met with so many rarities at and near Malaga, we may hope that other North-African stragglers will yet be noticed by him, as, constantly resident, he has every opportunity of observing them.

Yours &c.,
L. HOWARD IRBY.

Bonaparte's "Lophorina respublica."—In the new volume of his Catalogue of birds just issued Mr. Sharpe has transferred the name *Lophorina respublica* of Bonaparte (Compt. Rend. xxx. p. 131) from *Diphyllodes wilsoni* (to which it has been hitherto always referred) to the newly discovered *Diphyllodes gulielmi-tertii,* and has assigned to it precedence over the latter name. His reason for doing this is that *D. guelielmi-tertii* is the only species which answers Bonaparte's diagnosis. But, as I have already stated (P. Z. S. 1857, p. 6), and as Bonaparte himself has confessed (Compt. Rend. xxxviii. p. 262, et Not. Orn. p. 54*), the name *Lophorina respublica* was founded upon the same individual specimen as the *Paradisea wilsoni* of Cassin; and consequently these two terms cannot possibly be applied to two different species.

The fact is, I believe, as I was informed upon the best authority before I made the above-mentioned statement, that the late Prince Bonaparte, having been allowed to examine the

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* This important reference appears to have escaped Mr. Sharpe's notice altogether.

(then unique) type specimen in question, before its transmission to Philadelphia, thought the opportunity of describing a new Paradise-bird, and at the same time of promulgating his republican sympathies, too good to be lost, and in spite of the injunctions of the owner of the specimen, inserted the name "*respublica*," with a short diagnosis (certainly erroneous, and probably drawn up from recollection), in a footnote to a paper which he was at the time engaged upon for the 'Comptes Rendus.' It is certainly singular that another Paradise-bird should have been subsequently discovered that fits Bonaparte's diagnosis; but that does not justify the transference of the name to a species for which it was not intended. Indeed, under any circumstances, Bonaparte's *Lophorina* (sive *Diphyllodes*) *respublica* should be rejected for insufficient definition. It cannot be too often repeated that the term to be adopted as the permanent designation of a species should not be a subject of conjecture, or even of disputed evidence, but the first term that is *certainly* applicable to it*. Were this wholesome rule adhered to more strictly, we should cease to be perplexed by such startling changes in our ordinary nomenclature as have lately been suggested to us from several quarters.

P. L. SCLATER.

In the 3rd number of 'Der zoologische Garten' for the present year (p. 213) Dr. F. Brüggemann gives a short account of a very fine new species of *Polyplectron*, recently discovered by Dr. G. Fischer in the interior of Borneo, which he proposed to call *P. schleiermacheri*. It is nearest to *P. bicalcaratum*, but, as we can testify from personal observation, very markedly distinct. Two skins of this fine new bird have been lately received by the Darmstadt Museum. When we think of this and *Lobiophasis*, it becomes evident that there is still much to be done by the naturalist in the interior of Borneo.

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* *Cf.* 'Stricklandian Code of Zoological Nomenclature,' sect. 11 (p. 15 of edition of 1863).

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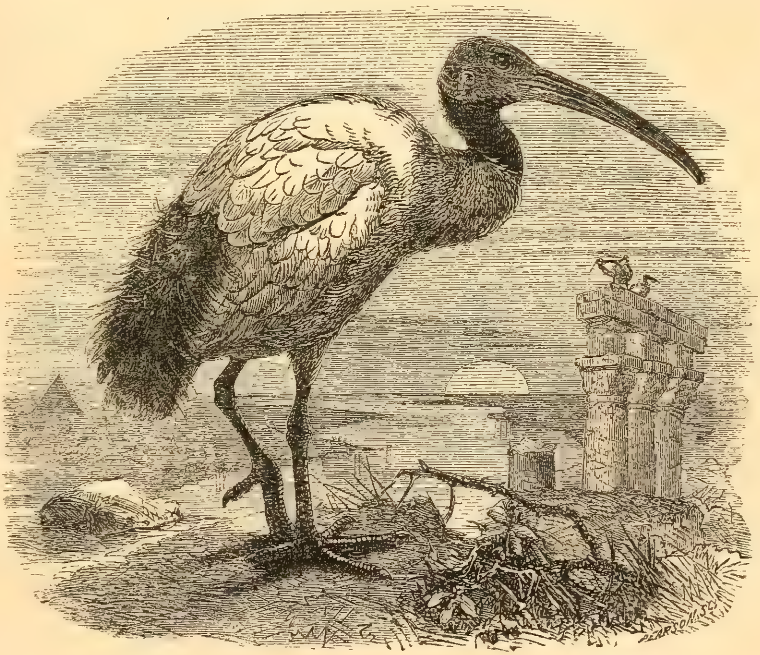

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8. T. SALVADORI. Catalogo di una collezione di Uccelli dell' Isola di Buru, inviata al Museo Civico di Genova dal Signor A. A. Bruijn. (Ann. Mus. Genov. viii. p. 367.)

9. ——. Catalogo degli Uccelli raccolti dai Sigg. A. A. Bruijn ed O. Beccari durante il Viaggio del trasporto da guerra olandese '*Surabaia*' dal Novembre 1875 al Gennaio 1876. (Ann. Mus. Genov. viii. p. 395.)

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13. Bulletin of the Nuttall Ornithological Club. Vol. i. no. 4. Nov. 1876.

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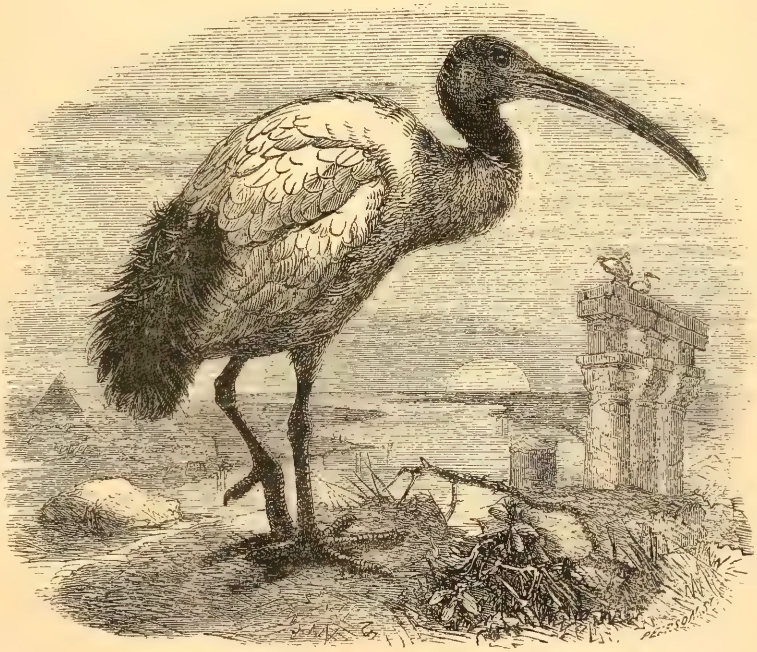

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3. Ornithologisches Centralblatt, 1877, No. 1.

4. O. v. RIESENTHAL. Die Raubvögel Deutschlands. Lief. 1–5.

5. Explorations Across the Great Basin of Utah. Appendix K.—Ornithology. A List of Birds by Prof. Spencer F. Baird. Washington: 1876.

6. Ornithologischer Verein in Wien. Mittheilungen des Ausschusses an die Mitglieder, 1876, Nos. 1–4.

7. MAJOR H. H. GODWIN-AUSTEN. Fifth List of Birds from the Hill-ranges of the North-east Frontier of India (Journ. Asiatic Soc. Beng. vol. xlv. 1876).

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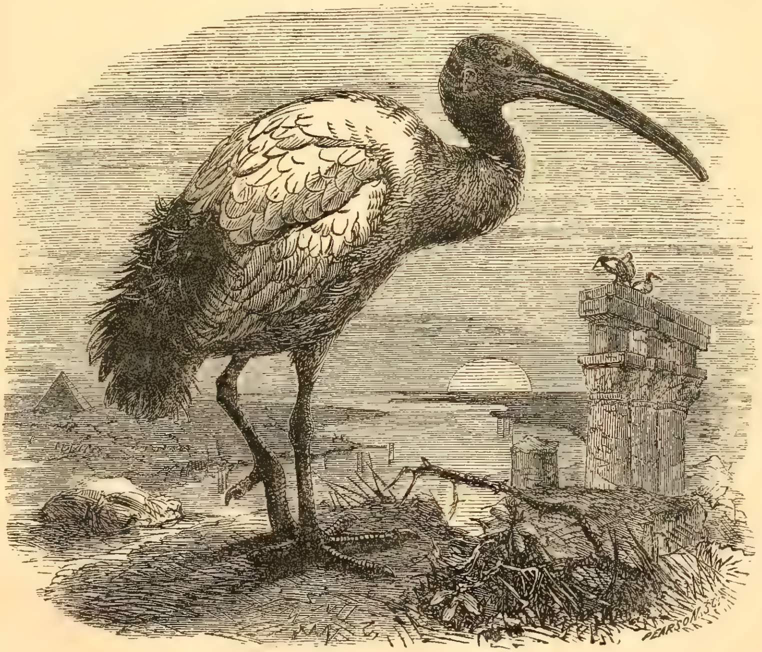

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2. TOMMASO SALVADORI. Osservazioni intorno alle specie del genere *Myristicivora*, Rchb. (Annali del Mus. Civ. di St. Nat. di Genova, vol. ix. 1876–77).

3. ——. Intorno alle specie del genere *Talegallus*, Less. (Annali del Mus. Civ. di St. Nat. di Genova, vol. ix. 1876–77).

4. ——. Note intorno ad alcuni uccelli raccolti durante l' esplorazione del Fiume Fly, per L. M. D'Albertis (Annali del Mus. Civ. di St. Nat. di Genova, vol. x. 1877).

5. ——. Prodromus Ornithologiæ Papuasiæ et Moluccarum (Annali del Mus. Civ. di St. Nat. di Genova, vol. x. 1877).

6. ——. Intorno alle specie di Nettarinie della Papuasia, delle Molucche e del Gruppo di Celebes (Atti della Reale Accademia delle Sci. di Torino, vol. vii. p. 299).

7. O. BECCARI. Le Capanne ed i Giardini dell' *Amblyornis inornata* (Annali del Mus. Civ. di St. Nat. di Genova, vol. ix. 1876–77).

8. J. V. BARBOZA DU BOCAGE. Aves das possessões Portuguezas de Africa occidental. Lista 13. (Jorn. de Sci. Mathem. Phys. e Nat. no. xxi. 1877).

9. J. A. ALLEN. Progress of Ornithology in the United States during the Last Century (Amer. Nat. vol. x. pp. 536–550, 1876).

10. ROWLEY'S 'Ornithological Miscellany,' Part viii. May 1877.

11. Report upon Geographical and Geological Surveys West of the 100th Meridian in charge of First-Lieut. Geo. M. Wheeler.—Vol. v. Zoology. 4to. Washington, 1875.

12. G. N. LAWRENCE. Description of a New Species of Bird of the Genus *Pitangus* (Ann. Lyc. N. Y. xi.).

13. J. A. HARVIE BROWN. On the Distribution of Birds in North Russia (Ann. & Mag. N. H. ser. 4, xix. pp. 277-290).

14. BLANFORD, W. T. The African Element in the Fauna of India (Ann. & Mag. N. H. ser. 4, xviii. pp. 277–294).

15. M. E. OUSTALET. Sur une nouvelle espèce d'Ibis (*Ibis gigantea*) (Bull. Soc. Philomathique de Paris, 7ᵉ sér. t. i. p. 25).

16. Geographische Gesellschaft in Bremen. Westsibirische Forschungsreise 1876 unter Führung von Dr. O. Finsch. Catalog der Ausstellung ethnographischer und naturwissenschaftlicher Sammlungen. Mit erläuternden Bemerkungen von Dr. O. Finsch. 8vo. Bremen, 1877.

17. Notes on the Ornithology of the Region about the Source of the Red River of Texas, from observations made during the Exploration conducted by Lieut. E. H. Ruffner, Corps of Engineers, U.S.A. By C. A. H. M'Cauley, and annotated by Dr. Elliott Coues. (Bull. U.S. Geol. and Geogr. Survey of the Territories, vol. iii. no. 3, 1877.)

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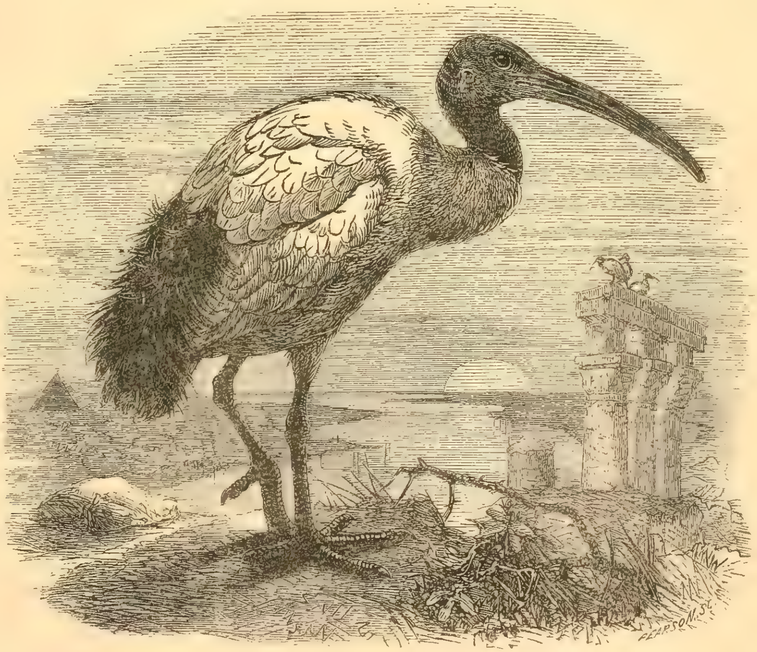

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3. H. T. WHARTON. A List of British Birds, arranged according to Sundevall's Method. London: 1877.

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7. J. A. HARVIE BROWN. On the Distribution of Birds in North Russia. Part iii. (Ann. & Mag. N. H. ser. 4, Sep. 1877.)

8. R. RIDGWAY. Sexual, Individual, and Geographical Variation in the Genus *Leucosticte*. (Forest and Field, Sept. 1876.)

9. R. RIDGWAY. The Birds of Guadalupe Island. (Bull. Nutt. Orn. Club, ii., July 1877.)

10. J. V. BARBOZA DU BOCAGE. Ornithologie d'Angola. Première Partie. Lisbonne: 1877.

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